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A NONSUTURE METHOD OF BLOOD VESSEL ANASTOMOSIS

EXPERIMENTAL AND CLINICAL STUDY

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In the early spring of 1942 we directed our efforts in search of a simple and yet efficient method of anastomosing damaged (severed) arteries adaptable to war use. An early start seemed timely. An opportunity would thus be afforded to indoctrinate those few basic principles in blood vessel surgery without which no technic of blood vessel anastomosis could possibly succeed when employed on a large scale, however simple in its execution.

The anatomic arrangement of collateral blood vessels in relation to main arteries in human extremities is such that war missiles causing damage to main arteries, of necessity, cause more or less damage to collateral vessels. There is, unfortunately, an anatomic limit to the number of collateral vessels that can be damaged and yet have a limb survive ligation of a damaged artery.

In this war, then, with effective treatment for shock, control of infection and vasospasm—adjuncts known to promote the blood carrying capacity of undamaged collaterals—a limb survives or dies following ligation of a damaged main artery in direct accordance with the number of collateral vessels remaining anatomically intact.

It is important to remember that successful restoration of blood flow by anastomosis is the one and only certain method of preventing the occurrence of anemic necrosis; collateral blood flow at its undamaged best can deliver but a small fraction of the minute volume blood flow that passes through a patent (anastomosed) main artery.

Extensive damage to collateral blood vessels was conceded to be an outstanding feature of the shrapnel extremity wounds of World War I. The great expansion of high explosive warfare in the form of land mines, grenades, fragmentation shells, aerial bombs and rocket shells in this war made it seem likely that there would be a preponderance of wounds characteristically destructive of collateral blood vessels.

In fact, before we had proceeded far in the European phase of World War II, British [1] and other reports [2] called our attention to both the very high incidence of high explosive wounds and the certainty with which gangrene followed ligation of damaged main arteries.

The control of infection and blood clotting [3] assures the success of blood vessel anastomosis and hence the control of blood flow. The elimination of devitalized tissue by débridement, the control of infection and an adequate supply of blood constitute a basic triad on which successful salvage of wounded extremities with main artery damage depends. Restoration of a pulsating normal volume blood flow by anastomosis revitalizes damaged tissues. It is a fact that damaged, anemic tissues afford a peculiarly favorable medium for the development of gas bacilli. Likewise a diminished blood flow disposes to the development of bone infection and delays bone union and the healing of wounds in general.

A NONSUTURE METHOD OF BLOOD VESSEL ANASTOMOSIS [4]

Starting with the ancient method of restoring blood flow through severed arteries, of which there is none simpler than tying the cut ends of a vessel over the ends of a connecting cannula, we added the principle of lining the cannula with a vein graft.

Read before the Surgical Section of the Academy of Medicine, New York, Dec. 1, 1944.

From the Departments of Surgery, Presbyterian Hospital, Columbia University College of Physicians and Surgeons, and the New York Hospital, Cornell University Medical College.

Owing to lack of space, this article is abbreviated in THE JOURNAL by shortened case reports and omission of measures contributing to the success of the method. The complete article appears in the authors' reprints.

Most of the experimental work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Cornell Medical College.

1. Fairbank, H. H. T.; Gordon-Taylor, G., and Page, C. M.: Emergency Amputations, War Med. **2**: 147-153 (Jan.) 1942.

2. The percentage of cases in which gangrene followed ligation of damaged main arteries reported from the IXth Evacuation Hospital during the Tunisian campaign was 70 per cent average for all arteries, and not a single instance of salvage following ligation of a damaged popliteal artery. Gen. W. H. Ogilvie, chief consultant to the British forces throughout the African campaign, in a personal interview stated that, "in spite of the employment of sympathetic nerve block and other adjuncts, the incidence of gangrene following ligation of damaged main arteries was far higher than that reported by Sir George Makins for World War I." He likewise stated that there had not been a single instance of salvage following ligation of a damaged popliteal artery. A war experience confirmatory of these statistics was revealed to Dr. Allen O. Whipple during a tour of the North African front in September 1943. Dr. Whipple recorded 8 cases with popliteal artery damage in which the leg was saved in only 1.

3. Murray (Heparin in the Surgical Treatment of Blood Vessels, Arch. Surg. **40**: 307-325 [Feb.] 1940) demonstrated that the efficiency of Carrel suture anastomosis in clean wounds is boosted from 35 per cent to 100 per cent by the continuous administration of heparin for a few days by intravenous drip. The credit for making the use of heparin practical under war conditions, however, must go to Dr. Leo Loewe and his associates (Loewe, L.; Rosenblatt, P., and Lederer, M.: A New Method of Administering Heparin, Proc. Soc. Exper. Biol. & Med. **50**: 53 [May] 1942). These investigators have proved that safe, continuous heparinization may be maintained for weeks at a time following the subcutaneous deposit, at forty-eight hour intervals, of heparin in Pitkin's menstruum. The latter permits a more even release of heparin than is practical to attain by the intravenous drip method. Hence, with the standardization of dosage, it is now practical to administer safe, automatically controlled, surgical heparinization in cases of wounds of the extremities at the field hospitals near the battle front without even the necessity of doing a blood clotting time.

4. Blakemore, A. H.; Lord, J. W., Jr., and Stefko, P. L.: The Severed Primary Artery in the War Wounded: A Nonsuture Method of Bridging Arterial Defects, Surgery **12**: 488-508 (Sept.) 1942; Restoration of Blood Flow in Damaged Arteries: Further Studies on a Nonsuture Method of Blood Vessel Anastomosis, Ann. Surg. **117**: 481-497 (April) 1943; Effect of Sulfathiazole Administered Orally and Sulfanilamide Implanted Locally on Contaminated Wounds: Experimental Study, Arch. Surg. **47**: 352-358 (Oct.) 1943.

It is of interest that paraffin coated cannulas were used, on accasion, by Professor Tuffier [5] in World War I, and not entirely without success in spite of the absence of modern chemotherapeutic control of infection and blood clotting.

We selected vitallium, an alloy,[6] as a suitable material from which to make cannulas or tubes. This metal may be left in tissues for indefinite periods without causing objectionable irritation. To facilitate bridging arterial defects of any length we recommend an identical technic employing a vitallium tube on each end of the vein graft.

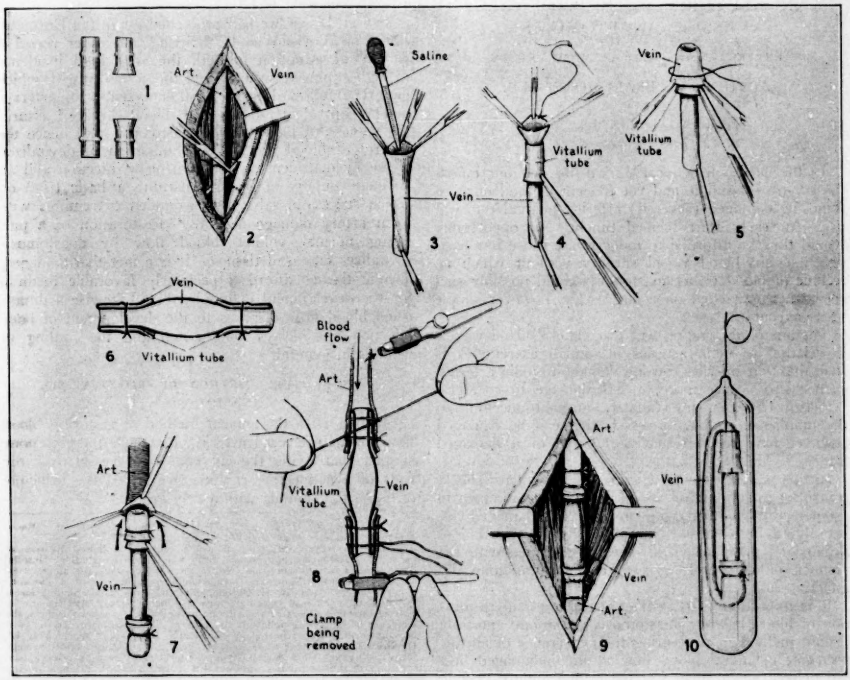

Fig. 1.—Operative technic of nonsuture method. 1. Cannula and tubes (for use in single or double tube technics). 2. Removal of vein graft; note that the branch is tied close to the vein with fine silk before clamping. 3. Irrigation of vein graft with isotonic solution of sodium chloride, to which a small amount of heparin may be added if desired. 4. Method of triangulating end of vein with mosquito clamps. 5. Cuffing and securing everted end of vein on the vitallium tube. 6. Double tube technic with the vein graft mounted. 7. Introducing the distal end of the vein graft mounted on a vitallium tube into the proximal end of the artery. 8. Tying fine silk ligatures just snug to prevent blood from penetrating between the vein and the artery intimas. Also releasing the proximal rubber shod clamp first to facilitate the passage distalward of any residual air bubbles within the graft. 9. Completed anastomosis: the perivascular tissues are closed snugly around the anastomosed artery when possible. 10. A convenient way of preserving, hermetically sealed in an ordinary test tube, a vein graft for quick freezing. The graft is moistened with isotonic solution of sodium chloride, one end mounted on a vitallium tube in the usual manner; the other end is passed through a second tube and brought over the first tube to protect the intima until used. A wire serves to suspend the graft.

Figure 1 illustrates the technic. The ends of the vein graft are everted (cuffed) over the ends of the cannula or tubes and secured by fine silk ligatures placed behind tying ridges 4 or more millimeters from the ends of the cannula or tubes. The cut ends of the artery are then brought over the vein covered ends of the cannula or tubes and secured by ligatures of heavy silk placed behind the tying ridges. To prevent blood from passing between the vein and artery intimas a fine silk ligature is tied, just snug, 1 or 2 mm. from the end.

The method affords a broad vein intima to artery intima contact for healing. The holding ligature is well away from the flowing blood. In the presence of bacterial contamination this type of junction would seem to offer an advantage over the suture junction in that in the latter the vessel wall encompassed in the suture line, and thereby somewhat strangulated, lies in direct contact with the flowing blood. The joint is leak proof in the presence of anticoagulant therapy. But, on the other hand, because of blood to intima contact only, the anastomosis affords little or no stimulus to thrombus initiation when the blood clotting time is normal.

Experiments.—Employing no anticoagulants, silk technic throughout, the small femoral arteries of dogs were selected for testing the efficiency of the nonsuture method for the following reasons: 1. Abundance of experience has shown that suture anastomosis of the femoral arteries of dogs, with or without the use of vein grafts, fails as often as it succeeds even

5. Tuffier, M.: De l'intubation dans les plaies des grosses artères, Bull. Acad. de méd., Paris **74**: 455-460, 1915; A propos des plaies des artères, Bull. et mém. Soc. de chir. de Paris **43**: 1469-1471, 1917.

6. The approximate composition of vitallium is cobalt 65 per cent, chromium 30 per cent and molybdenum 5 per cent. The tubes were supplied by the Austenal Laboratories, Inc., of Chicago and New York.

when undertaken by skilled operators employing rigid aseptic precautions, whereas the same technic may be employed to anastomose the aorta or carotid with fairly regular success.

2. A review of the literature on the subject of methods employing a nonsuture prosthesis for the anastomosis of blood vessels reveals not a single instance of success in bridging defects of the femoral artery in dogs, using vein grafts.

With careful attention to details of technic, asepsis and the use of a generous segment of femoral vein from the opposite leg, our nonsuture method affords a 90 per cent expectance of success in bridging defects of the small femoral arteries of dogs and without the use of anticoagulants.

We have explored anastomoses of the small femoral arteries of dogs up to sixty-nine days and found them patent. Figure 2 is a photomicrograph of the artery vein junction following removal of the cannula in a single tube vein graft anastomosis patent thirty-five days after operation. Note the excellent healing at the artery vein junction. The vein graft appeared healthy and well nourished throughout. This is of interest in that the vein graft, in the single tube technic, lies within the vitallium cannula entirely isolated from the perivascular tissues.

As would be expected with larger vessels, the method was used to anastomose the abdominal aortas of dogs, using external jugular vein grafts and the two tube technic, with regular success. Three animals were observed for a period of eight months. On exploration the anastomoses were patent and the vein grafts were not dilated. The walls were somewhat thickened and had every appearance of being healthy.

ANASTOMOSIS OF BLOOD VESSELS IN CONTAMINATED WOUNDS

Because of widespread bacterial contamination of vascular injuries in the war wounded, it seemed important to study the efficiency of the nonsuture method using the double tube technic in contaminated wounds in comparison with the Carrel suture method of anastomosing arteries.

Method.—Delayed anastomoses of femoral arteries were made through dirty, open wounds, in dogs, six and twenty-four hours after unsterile ligation and section. The arterial defects were bridged with free femoral vein transplants. No anticoagulants were employed.

The study embraced five series of animals, affording an observation on ten or twenty anastomoses per series. Sulfanilamide 1.5 Gm. was placed in alternate wounds throughout. Sulfathiazole 1 Gm. was given by mouth twice daily to dogs in two series: one Carrel suture and one nonsuture series. Irrigation of the wounds with saline solution was carried out in one Carrel suture and one nonsuture series, whereas in the remaining three series careful débridement of the wounds was carried out at the time the anastomoses were performed.

Results.—The success of the Carrel suture technic was boosted from 10 per cent to 40 per cent by the performance of débridement and the use of sulfonamides. In general, however, the study confirms what has long been known; namely, the low efficiency of the suture method of anastomosing blood vessels in contaminated wounds. Cultures taken at the sites of failure (thrombus, site of secondary hemorrhage and aneurysm) invariably revealed bacterial growth.

The interesting results, using the double tube, nonsuture method in twenty-four hour delayed anastomosis of femoral arteries in contaminated wounds invited analysis and comparison with the entire group. In the first place, anastomosis of arteries in contaminated wounds offers a sensitive index of the bacterial status and the relative efficacy of measures for the control of infection. For example, comparing results of anastomoses in the six hour contaminated wounds with the twenty-four hour wounds of beginning bacterial invasion, a "fall off" of 25 per cent successes occurred in the latter in spite of débridement of the twenty-four hour wounds versus simple irrigation in the six hour wounds. In respect to débridement, however, of the thirteen delayed anastomoses receiving sulfanilamide locally, but without débridement, there were thirteen failures (100 per cent), whereas in twenty-four hour delayed nonsuture anastomoses success followed débridement alone in 30 per cent of the cases. On the other hand, the 30 per cent successes with débridement alone was boosted to 60 per cent successes by the oral administration of sulfathiazole and finally to 85 per cent successes with the addition of sulfanilamide in the wounds. These findings are in accord with war experience to date; namely, that débridement greatly enhances the effectiveness of the sulfonamides in contaminated wounds.

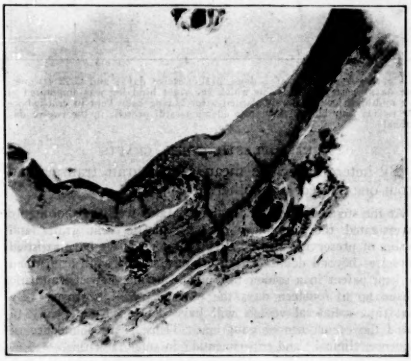

Fig. 2.—Section of specimen removed from animal 1880, showing the junction of the artery and the vein. This junction has been bridged by intima.

It was of interest to observe in these delayed anastomoses in contaminated wounds that secondary hemorrhage occurred only once following the nonsuture technic, and this in a twenty-four hour wound without the use of the sulfonamides. We have never observed an aneurysm either at the artery-vein junction or in the vein graft.

Injuries to arteries in the war wounded are likely to be extensive, and further sacrifice of the vessel is necessary in débridement. For these reasons a method of blood vessel anastomosis, to be successful and practical for war use, must be easily adaptable to the use of vein grafts, and of any length. Our method fulfils this requirement admirably and, unlike suture anastomosis, a considerable disproportion in size between the graft and artery complicates the technic and efficiency of the method not at all.[7] The majority of the wounded

7. Mann (Mann, F. C.; Herrick, J. F.; Essex, H. E., and Blades, E. J.: Effect on Blood Flow of Decreasing Lumen of Blood Vessels, Surgery **4**: 249-252 [Aug.] 1938) has shown that the lumen of an artery may be narrowed 50 per cent without affecting the volume of blood flow through the vessel. The cross section area of an artery may be cut down 90 per cent and yet the vessel deliver 70 per cent of the total volume blood flow.

soldiers will have veins intact suitable for use as grafts; e. g., cephalic vein for anastomosis of the companionate arteries; external jugular, great saphenous and femoral veins for anastomosis of other arteries. These veins may be removed quickly (twenty to thirty minutes) for use as transplants to bridge arterial defects.

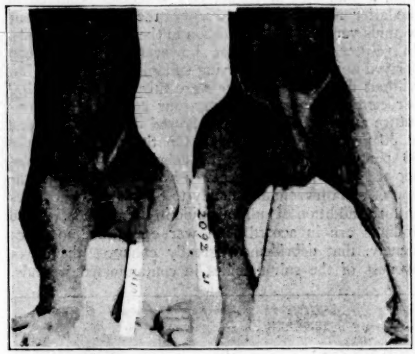

Fig. 3.—Appearance of 2 dogs, 2110 (twelve days) and 2092 (twenty-one days) postoperatively, in which the right hind leg was amputated at the midthigh level and reimplanted after having been kept in cracked ice for twenty-four hours. Moderate edema is still present in the twelve day animal

HETEROPLASTIC VEIN GRAFTS

By heteroplastic we mean a vein graft transplanted from one subject to another.

At the suggestion of Dr. Rudolph Matas we have thoroughly investigated the usefulness of heteroplastic vein grafts and means of preserving them. In the first place we have satisfied ourselves beyond doubt that if an anastomosed main artery can be kept patent in a soldier beyond the period of post-traumatic edema up to fourteen days the extremity will be saved. By that time collateral vessels will have developed sufficiently to avoid the occurrence of gangrene. There is an abundance of evidence, clinical [8] and experimental,[9] in support of this.

To gain information on whether heteroplastic veins will function adequately to prevent gangrene when used to bridge arterial defects, the following experiments were performed: Figure 3 is a photograph of 2 dogs in which the right hind leg was amputated at the midthigh level. After an interval of twenty-four hours the legs were reimplanted, the nonsuture two tube technic being used and vein grafts from a third and fourth animal to bridge the defects in the femoral artery and vein. The amputated limbs were preserved during the twenty-four hour interval in cracked ice. The dogs were given sulfathiazole 1 Gm. twice daily by mouth from the time of the first operation. The photographs were made twelve and twenty-one days respectively after reimplantation of the limbs, and there is every evidence of a good supply of arterial blood in these reimplanted legs. Correlation of these experiments with the informative studies of Brooks and Duncan on the effects of temperature on the survival of totally anemic tissue is of interest.

The survival of the legs in these 2 dogs depended solely on the function of vein segments transplanted from other dogs, and in this sense the experiments are critical. However, we have used heteroplastic vein grafts to bridge femoral artery defects in 10 additional dogs. The anastomosis functioned for twenty-seven days (average), which is well beyond the postulated fourteen days of post-traumatic edema.

Figure 4 shows a photograph of a dog's aorta in which a defect has been bridged with a segment of human saphenous vein by the nonsuture method, using two 7 mm. vitallium tubes. The photograph was taken at exploration nineteen days after the anastomosis was performed. Pulsation in the femoral arteries had remained excellent. The vein graft was patent and without evidence of beginning thrombus formation. Likewise there was no evidence in its gross appearance to indicate beginning resorption.

THE PRESERVATION OF VEIN GRAFTS

We all concede that a method of preserving veins for the purpose of functioning successfully when used subsequently as grafts to bridge blood vessel defects must meet some rigid requirements. Not only must the intima be preserved in a state of normalcy to prevent thrombus initiation at the first onrush of blood at the completion of the anastomosis but the mechanism must be intact for the immediate resumption of physiology to maintain a continued normalcy of the intima. And, finally, the method must take care of a varying degree of bacterial contamination of the veins at the time of their removal. (Veins removed according to the usual aseptic technic will reveal bacterial growth on culture in 3 out of 4 instances.)

We have found that veins quick frozen in an alcohol-solidified carbon dioxide mixture and kept in the frozen state function adequately when used as heteroplastic grafts to bridge arterial defects, and without the use of anticoagulants. As a matter of fact, the segment of human saphenous vein used to bridge a defect in the dog's aorta (fig. 4) was kept for twenty-four hours

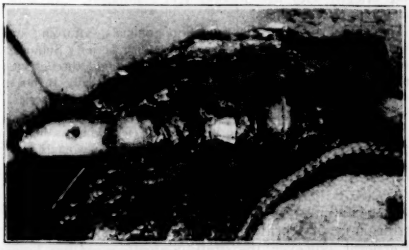

Fig. 4.—Appearance of a dog's aorta nineteen days after operation in which a defect has been bridged with a segment of human saphenous vein by the nonsuture method using two 7 mm. vitallium tubes. Vein graft can be seen between the exposed funnel ends of the tubes.

in the ice box and then quick frozen and preserved for three weeks before using. Veins may be kept frozen apparently for indefinite periods; e. g., on Sept. 8, 1943 defects in the right and left femoral arteries of dog 2283 were bridged with segments of femoral veins from dog 2219, preserved quick frozen since June 16, 1943 (nearly

8. Matas, R., in Keen, W. W.: Surgery: Its Principles and Practice, Philadelphia, W. B. Saunders Company, 1921, supp. vol. 7, chap. 24, pp. 737-819.

9. Reichert (The Importance of Circulatory Balance in the Survival of Replanted Limbs, Bull. Johns Hopkins Hosp. **49**: 86-93 [Aug.] 1931) resected (cutting all tissues except bone, large nerves, femoral artery and vein) and replanted by suture the soft parts of the hind legs of dogs and showed that arteries developed across the replant line on the third postoperative day. Veins and lymphatics regenerated on the fourth and fifth days. He likewise proved that the regenerated vessels were functionally adequate on the eighth postoperative day by ligation of the femoral artery and vein without the occurrence of gangrene. However, if the artery itself is ligated alone, gangrene of the leg cannot be prevented until the fourteenth day.

three months). The nonsuture method of anastomosis was employed, using two 3 mm. vitallium tubes with each artery and without the use of anticoagulants. On September 22 (two weeks after the anastomoses had been performed) both vein segments were exposed and proved patent. The wounds were left open to heal by granulation. On October 16 (thirty-eight days after the anastomoses had been performed) the wounds were reexplored. The vein grafts were patent and the anastomoses functioning. There was no evidence in gross appearance of beginning resorption of the heteroplastic grafts.

Illustration 10 in figure 1 shows a convenient way of preserving a vein graft quick frozen for emergency use; e. g., to bridge a defect in the carotid artery should beginning evidence of cerebral damage supervene. Note that one end of the vein graft is already cuffed on one vitallium tube with the other brought over it to protect the intima. Care should be exercised not to exceed physiologic tension in selecting the length of the graft used to bridge a given arterial defect, and, of equal importance, redundancy should be avoided.

Repeated demonstrations have revealed that, with ready mounted vein grafts at hand, completion of an anastomosis may be routinely accomplished within fifteen minutes by the average operator.

We present 2 cases to illustrate the application of the nonsuture method of blood vessel anastomosis in the treatment of acute traumatic extremity wounds with main artery damage:

CASE 1.—*History.*—M. E., a boy aged 7 years, admitted to the Presbyterian Hospital July 20, 1943 in shock because of hemorrhage from a severed brachial artery, had had his left arm pushed through a glass door while at play. He received an irregular laceration across the inner aspect of the middle section of the arm. The brachial artery and the median and ulnar nerves were severed. The patient was promptly given 500 cc. of blood, 300 cc. of isotonic solution of sodium chloride and 2 Gm. of sodium sulfadiazine intravenously.

Operation.—Five hours after injury, with ether anesthesia, a pneumatic tourniquet was applied well above the wound. The skin was carefully prepared and the wound thoroughly irrigated with saline solution. The retracted ends of the severed brachial artery were freed for a distance of 5 to 6 cm. The tourniquet was released sufficiently to flush out severed vessels. Rubber shod clamps were quickly applied to the ends of the severed artery and the latter irrigated with saline solution. The cut ends of the brachial vein were transfixed with C Deknatel silk. As débridement proceeded, the smaller vessels were ligated with B Deknatel silk.

At this point of the operation the team was divided. This enabled one section to proceed with repair of the nerves, using arterial silk, while the other proceeded with preparation of a vein graft for bridging the arterial defect. Accordingly, the left femoral vein was isolated for a distance of 10 cm. distal to the origin of the profunda. The defect in the brachial artery was bridged by means of the segment of femoral vein mounted on two vitallium tubes 2 mm. in diameter. Just before removal of the rubber shod clamps 15 mg. of heparin (1.5 cc. of liquaemin) was injected into the artery just proximal to the anastomosis.

A pink color of the boy's hand resulted immediately after reestablishment of blood flow and only a few minutes elapsed before the left hand was as warm as the right. The muscles, fascia and skin were approximated with fine silk. The patient received 300 cc. of blood during the operation and left the table in excellent condition. The arm was placed in a plaster splint with the hand in volar flexion.

Postoperative Course.—The wound healed by first intention. The patient was discharged on the eleventh postoperative day in a constant tension splint to permit exercise of unopposed extensor muscles, but protecting the paralyzed flexor muscles of the forearm against overstretching. Sulfadiazine therapy was continued through the fifth postoperative day. We cannot say that postoperative heparinization was adequate (its administration by continuous intravenous drip was discontinued after sixty hours) because the clotting time (capillary method) varied from three to six minutes. Daily observations of the left radial pulse revealed it unchanged in volume.

Fig. 5.—Arteriogram of the anastomosed brachial artery in case 1 one month after operation. Whereas the funneled ends of the vitallium tubes are close together, a column of diodrast may be noted passing through the intervening vein graft. Compare the long tubes as used in this case with the shorter tubes of recent design shown in the inset.

Follow-Up.—One month later the patient was receiving physical therapy. The left radial pulse remained good. An arteriogram (fig. 5) confirmed the patency of the anastomosis. However, thrombosis of the anastomosis took place immediately following the injection of diodrast.

After five months chronaxia studies revealed innervation of the forearm muscles supplied by the median nerve.

After fourteen months complete sensory and motor recovery of the median and ulnar nerves had occurred. However, there was yet some inability to extend the fingers completely as the result of weakness of the interosseus muscles, though chronaxia studies revealed complete regeneration.

After seventeen months function had completely returned.

CASE 2.—*History.*—R. J., a colored boy aged 15 years, entered the Presbyterian Hospital July 7, 1944 with a severe laceration of his left arm. He incurred the injury falling through a plate glass cellar window. A tourniquet was promptly applied. After his arrival at the hospital, some hours later, a pneumatic tourniquet was applied, and deflated at one-half hour intervals. Family and past history was noncontributory. Physical examination revealed temperature 101 F., pulse 132, blood pressure 160/80. The boy was well developed and was apprehensive but not in shock. Examination of the left arm revealed a transverse laceration starting in the midbiceps region, directed obliquely downward, dividing all soft parts to the bone and entering the elbow joints anteriorly. The laceration involved approximately two thirds of the circumference of the arm. The radial and median nerves were severed, as were the brachial artery and accompanying veins. As a result of muscle retraction the wound gaped widely. The forearm and hand remained cold, pale and pulseless following release of the tourniquet (fig. 6 *A* and *B*).

Operation and Result.—This consisted of irrigation and débridement of the wound, with suture of the radial and median nerves. The brachial artery defect was bridged with a segment of saphenous vein by the nonsuture technic, with a 4 mm. vitallium tube on each end. An excellent radial pulse was felt on releasing the brachial artery to blood flow. The postopera-

tive course was stormy, and great swelling of the entire arm occurred but subsided after ten days. The wound healed by first intention and an arteriogram carried out on the thirty-fourth postoperative day confirmed the patency of the anastomosis (fig. 7).

Follow-Up.—After four months the radial pulse remained excellent. Chronaxia studies revealed no innervation of the

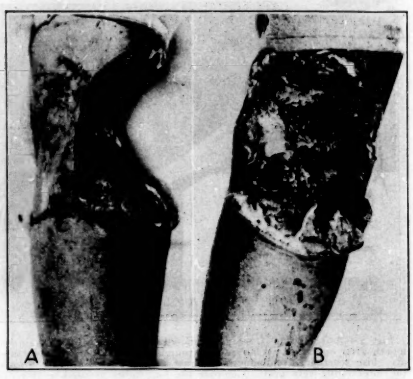

Fig. 6.—Lateral (*A*) and anterior (*B*) views of wound in case 2.

forearm muscles as yet. Muscles supplied by the tourniquet damaged ulnar responded to direct stimulation, whereas there was no response from those supplied by the sutured radial and median nerves. Furthermore, the latter muscles were more wasted and fibrotic.

At seven months beginning nerve regeneration was taking place below the elbow. The radial pulses remained equal.

The similarity of these wounds to war wounds was as follows:

1. Damage to collateral vessels was extensive because of the location and scope of the wounds.

2. They were contaminated wounds with delayed treatment: Time elapsed from injury to restoration of blood flow in case 1 was eight hours, in case 2 eight hours.

It seemed highly probable that the extensive destruction of collateral vessels precluded saving the arm without performing an anastomosis in case 1, and certainly gangrene was avoided by restoration of blood flow in case 2. Under the favorable egis of débridement and sulfadiazine in case 1 and, in addition, penicillin in case 2, primary healing followed primary closure of the wounds.

It is of interest to note that the great saphenous vein was too small to use as a graft in the brachial artery of the 7 year old boy (case 1), but the diameter was exactly right in the 14 year old boy (case 2).

The vitallium tubes used in case 1 were smaller than any ever used by us in anastomosing vessels in experimental animals; furthermore, the administration of heparin in this case was inadequate both as to quantity and as to duration. In spite of these handicaps, a radial pulse of constant volume was maintained in the arm until thrombosis of the anastomosis suddenly occurred following the injection of 35 per cent diodrast for arteriography one month after operation.

Case 2 well illustrates the viciousness of prolonged tourniqueting: nerve paralysis (ulnar), tourniquet shock and ischemic muscle changes. But it is of extreme interest that the latter was found only in the muscles supplied by the nerves that had been severed.

In the handling of wounded extremities with main artery damage the following routine is recommended:

1. Immediate control of hemorrhage: If a tourniquet is necessary, as it probably will be, it should be broad and well padded. A blood pressure cuff is ideal because of the ease with which it can be inflated and released at half hour intervals.

2 Treatment for shock: Whole blood transfusions are ideal in these cases because of promoting the maximum oxygen carrying capacity of the circulating blood.

3. Control of pain and vasospasm: Papaverine hydrochloride 1 grain (0.06 Gm.) given intravenously and followed at two hour intervals with ½ grain (0.03 Gm.) hypodermically is the best single drug for this dual purpose.

4. Chemotherapy: Penicillin is undoubtedly the preferable agent in these cases. From 30,000 to 50,000 units should be given intramuscularly, to be followed by injections of 20,000 to 25,000 units at three hour intervals. Second best is the sulfonamides, but a high blood level should be attained as rapidly as possible. The patient should, of course, be protected against tetanus.

5. Preservation of a lowered temperature in the wounded extremity: It is now recognized that the maintenance of a lowered temperature reduces the metabolic rate in anemic tissues and is an important factor

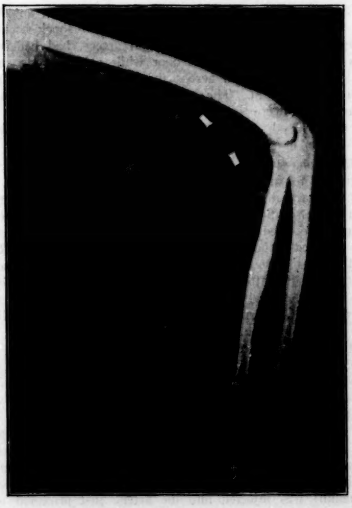

Fig. 7.—Arteriogram in case 2 thirty-four days after operation. The patent saphenous vein graft is about the same size as the anastomosed brachial artery. The slight bulge of the upper end of the graft marks a valve site in the vein graft.

in delaying the onset of irreversible changes. It is usually not difficult to attain the right degree of chilling. It is well to remember that a totally anemic extremity will quickly assume the temperature of the surrounding air. If the latter is below freezing, of course the limb must be covered sufficiently. If, on the other hand,

the surrounding air is above 50 or 60 F. the limb may be chilled by swathing it in moist [10] bandages and directing on it a current of air during transport or by an electric fan. And, finally, ice bags may be used, but guardedly, say one half hour on and one quarter hour off.

6. Position of limb: When at rest or in transport, the limb should be placed at rest in a position 4 to 6 inches below the heart level. This elevates venous pressure in the extremity just enough to keep what little blood that may arrive via collaterals sufficiently long for complete deoxygenization.

When the patient arrives at the installation where it is feasible to replace the tourniquet by surgical hemostasis, it is suggested that the operator should explore the wound and first secure the proximal stump of the severed main artery by ligature, securing in due course bleeding vessels as they are encountered. The distal end of the severed main artery should be washed free of clot with saline solution and the briskness of bleeding, if any, noted. Finally, 20 to 30 cc. of saline solution to which has been added 10 mg. of heparin (1 cc. of liquaemin) and 50,000 units of penicillin should be injected into the distal artery stump followed by its ligation. At this point of the procedure, if conditions do not favor proceeding with débridement or the restoration of blood flow by anastomosis (should the latter seem indicated), hemostasis may be completed and gauze placed loosely in the wound.

Penicillin 50,000 units, if not previously administered, should be given intramuscularly and continued thereafter, at three hour intervals, in adequate dosages. An adequate dose (150-200 mg.) of heparin in Pitkin's menstruum [11] should be deposited subcutaneously in the lateral aspect of the thigh. Papaverine hydrochloride should be continued subcutaneously, in half grain doses at two hour intervals until the patient reaches the installation with facilities necessary for definitive care, e. g., sympathetic nerve block, débridement and anastomosis.

Irrigation of the distal vascular tree with saline solution containing penicillin and heparin washes out contaminated thrombi from damaged veins, places penicillin in adequate concentration in those tissues in which, because of damage to blood supply, resistance to infection is lowest. Though some of the heparin and penicillin is washed out into the wound, the heparin which remains in those parts of the vascular tree where stasis exists prevents thrombosis until complete systemic heparinization supervenes, a matter of two hours following the subcutaneous deposit of heparin in Pitkin's menstruum. Then, for a period of forty-eight hours, it can be counted on that each collateral vessel anatomically intact will remain patent and the distal vascular tree free of thrombus. This insures, on the one hand, success with subsequent sympathetic nerve block in cases in which there are an adequate number of collaterals functionally intact and for others a patent vascular tree ready for the reception of a restored pulsating, normal volume blood flow by anastomosis.

There is excellent evidence, both experimental and clinical, in support of the opinion that if the foregoing measures are carried out, with careful attention to detail, the expectancy of salvage following restoration of blood flow by anastomosis may extend from twenty-four to forty-eight or more hours after injury—time to cover a lot of distance in this mobile era.

(To be continued)

10. We have found that wetting the gauze with alcohol at half hour intervals is a simple method of chilling a limb.
11. Procurable of Koche-Organon, Inc., Nutley, N. J.

ABDOMINAL PAIN IN CHILDREN

JOSEPH BRENNEMANN, M.D.
READING, VT.

There is probably no more interesting, uncertain or hazardous clinical domain in childhood than acute conditions in the abdomen and pain is the presenting symptom, the warning signal, that something has gone wrong and that it may be serious. That it is not usually so has in itself an element of danger. The very fact that the incidence of conditions that are not serious is much higher than that of those that are may lead to a lack of wariness that may be fateful. The differentiation cannot be made safely on the telephone. The difficulty in diagnosis is not due to the fact that the infant cannot talk and the older child may not be able to give an intelligent account of his symptoms. The pediatrician is as much at home with the youngest child as he is with the oldest. The morbid anatomy of the child is distinctive and relatively limited; his signs and symptoms are true and dependable and are not swayed by aberrant emotions as they are more often in the adult.

Pain in the sense here used naturally includes tenderness, which is usually of greater diagnostic value in this connection than is spontaneous pain. For this and other reasons, palpation is the most revealing procedure in abdominal diagnosis.

The majority of the more serious abdominal conditions heralded and accompanied by pain fall into two main categories: those due to obstruction and those due to infection. Each of these presents its own characteristic signs and symptoms that vary only with the degree rather than the nature of the underlying condition.

When there is obstruction to any hollow viscus with a muscular propulsive mechanism there is intermittent pain, which may be very slight or very intense depending on the degree and suddenness of the obstruction. If it is sudden and complete, the pain is agonizing, especially at the start, and there may be shock. This is known as colic no matter what the underlying cause. There is very little tenderness. Pressure, indeed, is often a source of relief and is not infrequently self applied. If the obstruction is partial and gradual in onset, the pain varies with the degree of obstruction. It is always intermittent, it may be almost negligible, it may be severe. Hypertrophy, hyperperistalsis and distention, finally atony if too long continued, supervene proximal to the point of closure, and atrophy and contraction distal to it.

In conditions due to infection, the pain is more constant and uniform unless there is concurrent obstruction. Intermittent periods of greater pain will then manifest themselves. Tenderness is always present over the affected area and is more pronounced than unelicited pain.

THE OBSTRUCTIONS

In the child, the obstructions occur predominantly in the intestinal tract, and the pains and other symptoms and signs conform to what has just been said. Among the congenital intestinal obstructions are those due to atresia and stenosis, bands, eventration, fetal peritonitis, malrotation of the midgut and meconium

Dr. Brennemann died July 2, 1944.
Read in a symposium on "Abdominal Pain in Children" before the Section on Pediatrics at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

ileus, in which there is an almost irremovable rubbery mass of meconium throughout the intestinal tract due to a pancreatic deficiency.

PYLORIC STENOSIS

In pyloric stenosis there is a gradual and partial obstruction. There is therefore only slight pain, usually not enough to make the infant cry. There is only an obvious discomfort, as shown by the wrinkled brow, the look of apprehension and the stopping of nursing as each new episode occurs coincidental with the appearance of maximal peristaltic gastric waves and the approach of projectile vomiting.

THE COLIC OF INFANCY

The colic of infancy is in a class by itself. The very name in common usage everywhere suggests a pathogenesis identical in nature with that of other colics. The pain is agonizing; it is definitely intermittent. It comes on rather suddenly and usually ends as abruptly. Pressure is grateful as in other colics, as every mother knows. For some unexplained reason it tends to occur at about the same time each day, usually the late afternoon or early evening. The frequency with which it occurs only during the first few months of life has led to the term "three months colic" among the public, who often look on it, in legal phraseology, as an "act of God," something that cannot be avoided and must be accepted. It has been attributed to enterospasm, imbalance of the autonomic nervous system, a hypertonic or neuropathic constitution, hunger, overfeeding and even a "fatigue toxin" in the mother's milk. Since one cannot accept all of these explanations one need not accept any of them. Colic is a human condition; it does not occur among the young of our barnyard animals. The baby comes into the world far more underdone than these and it is probable that the intestinal tract shares in that handicap. Colic is as frequent in the breast fed as in the artificially fed infant; probably more so. With its content of around 7 per cent of lactose and nearly 4 per cent of fat, human milk has a high percentage of fermentable food elements. The distention by gas from this source may itself be a cause of severe pain and possibly of mechanical obstruction. It seems not unlikely too that acute obstruction may result from kinking or bending on itself of the overdistended intestine in the cramped space in which it lies. The relief that often comes from an enema or a spontaneous burst of flatus lends confirmation to an etiology of this nature. I have never encountered colic in an infant with pyloric stenosis where hunger must be at a maximum. Overfeeding may enter into the picture. The other explanations seem hazy and are not fully established therapeutically.

Babies often cry during, more often immediately after, nursing, obviously because of the combined pressure of food, gas and swallowed air and the inability of the stomach to push the milk through the pylorus fast enough. This is sometimes called by infant nurses the "up" as compared with the "down" variety of colic just discussed. The pain is often quite intense. It is relieved at once by holding the baby in the erect position and making pressure on his stomach, or more often by holding him snugly against the shoulder and patting his back. This is commonly referred to as "patting up the bubbles" or, more onomatopoetically, as "burping."

ACUTE INTESTINAL OBSTRUCTION

Intussusception is the most frequently occurring type of acute intestinal obstruction. It is relatively rare after the first year of life and especially so after the second. The onset is dramatic. Awake or asleep the baby suddenly cries out with a pain that is obviously extreme. He screams, claws and clambers up on his mother, twists and squirms, and nothing gives any relief until, almost as suddenly, there is a lull with absence of pain, only to be followed by a similar painful episode. This sudden onset is of great diagnostic value. As in almost no other condition the mother usually states the exact hour at which the pain began. In the course of some hours the pains become less severe, as a rule not enough to cause the child to cry out as before. With each recurrence he merely squirms, throws himself to one side, doubles up, whimpers, moans or sighs. His facies usually becomes so distinctive that it too is of diagnostic value. He appears calm, too calm, paying little attention to his surroundings and yet seems preoccupied and apprehensive. Only twice can I recall having seen a child with an intussusception smile. This calm that follows the storm, probably due to shock, is apt to mislead the mother, who naturally measures her child's illness by the degree of pain, as well as the doctor who has not seen or properly evaluated the onset. The blood in the stool, often only in a second one, brings about renewed interest. The sausage shaped tumor that is pathognomonic in this clinical setting, that may be found anywhere between the ileocecal valve and the rectum, that can nearly always be made out by palpation without an anesthetic, if one has patience, gentleness and a warm hand, is only slightly tender.

A rectal examination is always interesting for several reasons and may clinch the diagnosis. Whereas the normal infant nearly always screams with pain, the baby with an intussusception will, as a rule, pay no attention to the painful procedure. Again, the finger seems to fall into an empty cavity and as it is withdrawn it is followed in the great majority of cases by a small, silent spurt of a turbid currant jelly-like mixture of blood and mucus that too is pathognomonic of intussusception in the proper clinical setting. The examiner may further be rewarded, though rarely, by finding the cervix-like mass with its central dimple.

If in any case of intussusception there is pure blood in any considerable quantity one must suspect that an ulcerated Meckel's diverticulum is involved in the process. Finally it must be borne in mind that very exceptionally there may be but little pain at any time or a great deal throughout the whole course of the illness.

Sudden and complete intestinal obstruction from any cause such as strangulated hernia, volvulus, paralytic ileus, congenital or acquired bands or Meckel's diverticulum may present much the same pain and other signs and symptoms that occur with intussusception except that there is no bleeding from the rectum and no sausage shaped tumor.

CHRONIC INTESTINAL OBSTRUCTION

The pain that occurs with chronic intestinal obstruction due to congenital bands or narrowing, to tumors, to postoperative adhesions and contractions and other like conditions may be negligible; it may be fairly severe, depending on the nature, the rate of development and the degree of obstruction. It is always intermittent. It occurs with each new contraction of the intestine

proximal to the point of obstruction. It is in these chronic conditions that intestinal patterning, exaggerated peristaltic movements and abdominal distention are the outstanding features, especially if the colon is involved. The diagnosis must be based on the whole clinical picture.

CONGENITAL ANORECTAL STRICTURE

Congenital anorectal stricture is not a rare condition; it presents a striking clinical picture and yet it is still commonly not recognized. The obstruction is due to an incomplete fusion of the descending mesenteron and the ascending proctodeum during fetal life with a resulting iris diaphragm, or sickle shaped, protrusion from the rectal wall into the lumen of the intestine at a point rarely more than a centimeter above the sphincter ani. If the obstruction is only moderate there will be relatively slight pain; there may be little or a great deal of distention and patterning if the condition is not relieved. The stricture, on the other hand, may be so tight that the smallest little finger cannot be inserted at one sitting without undue force and only a narrow ribbon-like, or slate pencil sized, stool can be passed with great effort. Even meconium and gas may not be passed for days. The abdomen may assume truly batrachian proportions and be covered with engorged veins. Under these more acute conditions the infant may scream with each new painful contraction. That the disease is not one of great rarity is evidenced by the fact that I have seen at least 25 cases. In every instance the child was completely cured by digital dilation, sometimes by one insertion, more often by inserting a larger finger each time over a period of days. In only 1 infant, though the stricture was fully dilated, abdominal distention persisted as the result of some cause that was not even cleared up by laparotomy. The surgeon is, naturally, rarely privileged to see this condition.

Similar signs and symptoms may be produced by redundant valvelike folds, or plications, of the mucosa higher up in the rectum. A boy about 6 years of age with a huge megacolon could be completely deflated with a hissing sound each time a proctoscope was easily passed just 4 inches.

OBSTRUCTION OTHER THAN INTESTINAL

Renal and gallstone colic I have never encountered in a child. Ureteral obstruction due to congenital narrowing of the ureter at the ureterovesical junction, or an aberrant artery crossing the ureter near the renal end, or a kinking of the ureter causes hypertrophy and dilatation of the ureter and kidney proximal to the obstruction, but this rarely leads to much pain; sharp pain may, however, occur with acute obstructions due to kinking. An acute painful obstruction due to plugging of a ureter with pus in so-called pyelitis is, in my experience, either extremely rare or else hard to recognize. Vesical neck obstruction leads to hypertrophy and dilatation of the bladder, ureters and kidneys and carries with it the intermittent pain and discomfort of an obviously chronically distended bladder.

Children will sometimes permit the bladder to become distended to a painful degree without any evidence of either a local or a central lesion. A little encouragement, a stern admonition, some running water, letting a bedridden girl sit up and a boy stand, will nearly always obviate the necessity of catheterization. A fairly common condition is the very painful, acute distention of the bladder due to the pain on urination that goes with the ulcerated meatus that so often accompanies the ammoniacal night diaper of infancy. Sometimes the opening is nearly closed by a crust. Applying a drop of a cocaine solution to the meatus brings prompt relief to both the local pain and the painful distention of the bladder.

THE INFECTION APPENDICITIS

Appendicitis is the *bête noire* in abdominal diagnosis. Because an early and immediate diagnosis is always important and may be vital, every abdominal pain, every "stomach ache" calls for the exclusion or establishment of the diagnosis of that disease. The warning signal of abdominal pain can never be dismissed casually. While the diagnosis, based on the mode of onset with characteristic pain, tenderness and vomiting, the low fever and the usually significant leukocytosis, is often, probably usually, easy, it is by no means always so. After more than forty years of extensive and intensive experience and an interest in the subject second to none other, I can truthfully say that I still approached the acutely painful abdomen in a child with more apprehension and a greater feeling of uncertainty than any other domain in childhood. Even sadder is the fact that all this interest and experience did not make me feel that I had a very appreciable edge on my residents, whose experience was so much more limited. I think I might add, after due hesitation, that even the excellent surgeons with whom I was associated did not have a significantly higher batting average than did the rest of us. The surgeon has an advantage over us in that his experience is largely restricted to those cases that probably are, or are thought to be, appendicitis. He is at a disadvantage in that he does not see the far greater number of cases of abdominal pain that might be due to appendicitis but are not that the pediatrician and the general practitioner are called on to differentiate. These include nearly all other painful abdominal conditions, except those already discussed, and can therefore be taken up in the differential diagnosis of appendicitis.

The appendix is an insignificant little organ of serious import only because of its location in the peritoneal cavity. When inflamed it very rarely causes intense pain or more than a few degrees of fever. Only two or three times have I seen a child scream with pain. He may even then have had a low threshold with reference to pain. As in the adult, the pain commonly starts in the region of the umbilicus and after a variable period it shifts to some other part of the abdomen, usually to the right lower quadrant. The tenderness is always at the point of maximal involvement and is of far greater diagnostic value than the spontaneous pain. Early point tenderness is the single most important diagnostic sign. Later it becomes more diffuse. This point is most frequently somewhere around McBurney's point. It may, however, be higher or toward or in the right flank if the appendix is retrocecal or near Poupart's ligament on the right side or even to the left of the midline. We had at one time 2 children in whom the tenderness was definitely on the left side. One was a case of situs inversus; in the other child the appendix stretched across the midline and the tip was the most tender part. The child naturally protects himself voluntarily by tensing his abdominal muscles when he is palpated. Involun-

tary, boardlike rigidity occurs when peritonitis has set in. Rigidity is not an essential factor in the diagnosis of an uncomplicated appendicitis. Rebound tenderness is interesting but merely indicates that there is an intra-abdominal infection. It has never seemed to me that the very unpleasant, even painful, rectal examination often adds anything to the diagnosis in a child except when a pelvic abscess is suspected either before, but especially after, operation.

DIFFERENTIAL DIAGNOSIS AND OTHER CAUSES OF ABDOMINAL PAIN

The pain of a diaphragmatic pleurisy of a right lower lobe pneumonia may be referred to the right upper quadrant of the abdomen and simulate that of appendicitis. The pain is usually greater than the tenderness and higher in the abdomen. The clinical pictures in the two conditions, however, differ widely. If one is in doubt an x-ray film will nearly always settle the matter.

Carnet published a series of papers dealing with "intercostal neuralgia" as a source of error in the differential diagnosis of appendicitis. He maintained that if the abdominal wall was tensed by straining or by elevating the legs in the dorsal position the tenderness would disappear in appendicitis and remain in "intercostal neuralgia." I was not impressed until he showed me several cases, all, however, in adults. It is a difficult sign to elicit in children.

A beginning peritonitis due to perforation of an ulcer in Meckel's diverticulum can hardly be differentiated from appendicitis unless it is accompanied by a hemorrhage from the rectum.

Torsion of a right sided ovarian pedicle gives much the same type of pain and other symptoms as those of an inflamed appendix. A very high leukocyte count or the early finding of a small, hard, fairly tender mass high on the right side on rectal examination should make one suspicious of a twisted pedicle. The first premenstrual pain of an adolescent girl, even the intermenstrual mittelschmerz of a ruptured ovarian follicle on the right side may have to be considered. The abdominal pain of Henoch's purpura may lead to an error in diagnosis if the petechial hemorrhages have not as yet appeared in the skin, a possible occurrence. This is true also of the pain and tenderness of a right sided oophoritis or of an acute pancreatitis occurring with mumps, especially if the involvement of the salivary glands has not yet occurred or has not been recognized. A diverticulitis other than that of Meckel's diverticulum, which can hardly be differentiated from appendicitis, I have never recognized in a child. The pain and tenderness of subdiaphragmatic abscess, usually on the right side following appendicitis in children, develops slowly and is rarely severe—it may be nearly absent. It may be referred to the shoulder, more often to the right upper quadrant of the abdomen, due to diaphragmatic pleurisy, which is always present together with a pleural exudate. The x-ray may also show air in the abscess below the diaphragm or succussion may be elicited. In perinephric abscess there is dull pain and deep tenderness of gradual onset in the flank. The pain and tenderness of the onset of dysentery may be confusing if the characteristic diarrhea and tenesmus have not set in. The discomfort of a simple gastroenteritis is usually not localized and should not enter into the picture as often as it does.

PARENTERAL INFECTIONS

A frequent cause of confusion in the differential diagnosis lies in the abdominal pains that occur with parenteral infections, most often with upper respiratory tract infections, possibly only because these are more frequent than all other infections combined. They occur not infrequently with acute rheumatic fever. One type of pain occurs early, is commonly restricted to the umbilicus, is sharp, intermittent, of variable intensity and suggests a referred pain from some undetermined source. There is little or no tenderness. Another pain occurs at any time during, or throughout, the parenteral infection, is more diffuse, of a duller character and there is more tenderness than spontaneous pain. This pain is rather obviously due to mesenteric lymphadenitis. This has been confirmed by both operation and necropsy. If the pain and tenderness are widespread or on both sides, the case is probably not one of appendicitis. Whether these two manifestations of pain have a common origin is not known. One can only speculate too as to whether this more widespread type of lymphadenitis has the same etiology as the mysterious, apparently more regional lymphatic involvement not so infrequently encountered at operation instead of a suspected appendicitis. I rather doubt it myself. It has been claimed that the differential diagnosis between appendicitis and lymphadenitis can readily be made by turning the patient for a short time on the left side and then determining the site of tenderness. If it remains on the right side it is said to be due to appendicitis; if it has shifted to the left, to lymphadenitis. I have not been able to confirm this sign in children, nor do I know how to differentiate the two conditions. It should be emphasized, although parenthetically, that the presence of an upper respiratory tract infection must never keep one from treating as appendicitis a condition that looks like appendicitis, since there is considerable evidence that more than half of all cases of appendicitis are causally related to throat infections.

PERITONITIS

In secondary peritonitis, usually due to appendicitis, there may be a lull in pain following rupture of the appendix, but this is soon followed by greater pain, exquisite tenderness and involuntary boardlike rigidity over the affected area. These are often more widespread than the local lesion would seem to indicate. It is then often hard to determine whether one has to deal with a spreading secondary peritonitis or a so-called primary peritonitis if one sees the child at an advanced stage of the disease unless there is a clearcut history of the pain and tenderness having started in the right lower quadrant or unless there is still more tenderness in that region than elsewhere. If there is a walled off local abscess, the pain and tenderness lessen gradually at first and after a time much more rapidly. Similar signs and symptoms follow the rupture of an intestine, the perforation of an ulcer or the suppuration and rupture of a lymphatic gland, fortunately a very rare occurrence.

In primary peritonitis the child appears from the start much sicker than with an uncomplicated appendicitis. Severe pain, mirrored in the drawn and tortured face, and exquisite tenderness and boardlike rigidity, appear rapidly over the whole abdomen with no definite localized starting point. It is, however, sometimes difficult to diagnose in a young infant, and now with the

use of the Wangensteen technic and the sulfonamides, which seem clearly indicated if a primary peritonitis is suspected, we are sometimes confronted with the anomalous situation of probably having cured a very serious illness without knowing whether it really existed. The pain, tenderness and other signs and symptoms are the same whether the peritonitis is due to a pneumococcus or to a hemolytic streptococcus, which seem about equally frequent as causal agents. Primary peritonitis is often preceded or accompanied by diarrhea, a very rare occurrence with appendicitis or secondary peritonitis.

Tuberculous peritonitis usually causes little more than a dull pain or discomfort unless there is obstruction due to narrowing of an intestine or extreme distention from fluid.

In conclusion, I can only say that the majority of abdominal pains encountered in private practice, which gives a truer picture of actual incidence than is found in hospital practice, have, in my experience, been of unknown nature and unknown etiology.

ABSTRACT OF DISCUSSION

DR. M. G. PETERMAN, Milwaukee: Abdominal pain is one of the most common symptoms in childhood. Children refer many of their complaints vaguely to the abdomen. Fortunately they vomit easily, especially after dietary excesses. The pain and vomiting must not be taken too seriously, since they usually tend to subside spontaneously if the children are left alone and allowed to rest. The greatest danger to the patient is the surgically minded colleague who focuses attention on the appendix. Acute appendicitis is a rare disease in childhood, but, unfortunately, appendectomy is paradoxically a common operation. I am amazed at the discrepancy between the number of abdominal surgical scars I see daily and the few cases of genuine acute appendicitis. I am just as much astounded at the rarity of leukocyte and differential counts and rectal examinations on children before operation. If a reasonable doubt exists as to the diagnosis of acute appendicitis, the appendix must be removed. However, that doubt cannot be reasonable until a leukocyte and differential count, a urinalysis and a rectal examination have been made. Surely there is always time for these harmless procedures before submitting a child to an abdominal exploration. The incidence of cases diagnosed as acute appendicitis at Milwaukee Children's Hospital in the last ten years was only 2 per cent of the total admissions. Many children with recurring abdominal pain are brought in to the office for diagnosis after appendectomy has failed to bring relief. The child with recurring abdominal pain demands a careful examination and a consideration of the possibility of gastrointestinal allergy and of subacute rheumatic fever. These two conditions often explain the obscure pains which may be associated with low fever and slight, if any, leukocytosis. Allergy causes pain by producing spasm of the intestinal tract and rheumatic fever, by infection. Much of the colic in infants is due to gastrointestinal allergy to foods, particularly when these are introduced too early. It is a common practice today to introduce new foods long before there is any need for them and long before the infant gastrointestinal tract is prepared for their digestion. Commercial advertising has exerted a pernicious influence on infant feeding in modern practice. Another cause of chronic or recurring abdominal pain emphasized long ago by Dr. Brennemann is that due to the infection or enlargement of retroperitoneal glands. In such possible cases tuberculin must be given and sedimentation rate tests made for diagnosis. Chronic constipation or incomplete evacuation of the rectum is a common cause of abdominal pain and can be easily remedied without surgery. I agree with Dr. Brennemann that the majority of abdominal pains in children are of unknown etiology, but I am sure that most of these disappear under conservative management.

DR. JOSEPH GOLOMB, New York: In differentiating diaphragmatic pleurisy or pneumonia from appendicitis Dr. Alexander Nicoll of Fordham Hospital has the apt saying "Too sick, too soon." This means too sick, too soon to be appendicitis. In differentiating a surgical from a nonsurgical condition of the abdomen Dr. Henry Roth of Lebanon Hospital has a helpful hint: "A child who is conscious and not forcibly held, who on deep abdominal palpation makes no attempt to remove your hand probably does not have a surgical condition of the abdomen. The converse is not true." Dr. Brennemann has described the severe pain lasting for months caused by a membrane at the anus. This is important but not common, as I have seen only 3 cases in over a quarter of a century. However, there is a common entity, frequently unrecognized, caused by spasm or hypertrophy at the anus. Here there is a history of colicky pain, worse after each feeding, with considerable straining at stool, followed by a soft, normal bowel evacuation. This condition is usually relieved by a single insertion of the small finger, although sometimes repetition is needed. I feel that this entity as a cause of abdominal pain should always be kept in mind. A radical suggestion to prevent anal disturbances would be to have the obstetrician do a rectal examination of every child before it leaves the delivery room.

DR. JOSEPH BRENNEMANN, Reading, Vt.: I yield to no one in the matter of conservatism, in the matter of using every possible means of trying to decide whether a child has appendicitis or whether it has not. I think there is no question but that there are more children operated on for appendicitis than those who really have appendicitis; nevertheless I think that it is relatively rare that one would be justified in assuming that doctors are operating on appendicitis for the sake of the operation. I have not made rectal examinations routinely. A rectal examination is an extremely unpleasant experience. I can recall only about 1 case in which I missed for a short time a small abscess above Poupart's ligament that I could find after a resident called my attention to the fact that there was a little mass on the rectum. Following operation, when there is a possible paralytic ileus a rectal examination is indicated. I do not quite appreciate why a colic is due to allergy and is present between 5 and 6 o'clock in the afternoon or between 9 and 10 in the evening almost every time instead of at the same time the bottle is given or at some other time of day. I am not unconscious of the fact that constipation makes an abdominal pain. I was guilty at one time, when we had more diarrheas than we have now, of using the expression "Thank God for constipation in a baby," because constipation we can always relieve. Diarrhea was a thing that used to bother us a lot. Why sticking a finger into a child's rectum should cure colic or should cure a condition of this sort is a little hard for me to comprehend. I have never seen it. Dr. Golomb spoke of a membrane. That is a different thing. One can put a finger, as I have done in these cases, into the rectum every day and the muscle will be just as tight the second and third and fourth day as before; but if one slips a finger into one of those that has an anal sphincter with difficulty today one can do it easily tomorrow.

Medical Facilities in the Philippine Islands.—At the end of 1938 there were about 160 hospitals with a total capacity of approximately 0.76 bed per thousand of population (United States of America, 9.7 beds per thousand of population). This included hospitals directly under the jurisdiction of the commonwealth government, general hospitals, university hospitals, leprosariums, penal hospitals, mission hospitals, private hospitals and maternity hospitals. In general, hospitals were fairly well equipped and were able to offer a variety of services. Public health laboratories were maintained in the provinces, and their facilities were available free of charge. In addition there was a large number of public dispensaries and special treatment stations. In every instance the hospitals and clinics were utilized fully, and increased capacity was a constant need. The outstanding deficiency was a notable lack of isolation facilities for patients with communicable diseases.—Simmons, James S.: Global Epidemiology, Philadelphia, J. P. Lippincott Company, 1944.

ABDOMINAL PAIN IN CHILDREN DUE TO ALLERGY

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Abdominal pain in children at times presents difficulty in diagnosis. Every year children with obscure abdominal pain are admitted to our hospital wards and subjected to many tests to rule out such conditions as tuberculous abdominal lymph nodes, various anatomic defects of the gastrointestinal tract, recurrent appendicitis, pyelitis, kidney stones and so on. Very definite causes may be found as a result of such investigations, but on occasion the child is sent home with his condition undiagnosed. Our thesis is that in some of these children abdominal pain may be due to food allergy. The many differentiating points of interpretation of abdominal pain found in intussusception, appendicitis, dysentery, peritonitis, mesenteric lymphadenopathy, pneumonia, rheumatic fever and simple gastrointestinal disturbances will not be considered in this communication. The discussion herein is solely concerned with the evaluation of abdominal pain due to food allergy.[1]

PATHOGENESIS

I have observed many guinea pigs with pronounced spasm of the intestine after an acute anaphylactic reaction when fed milk to which they were sensitized. The outstanding features of anaphylaxis in the calf noted by Code and Hester [2] were dyspnea followed by progressive distention of the abdomen. The abdominal skin became extremely taut. The ballooned abdomen gave a pronounced tympanitic note on percussion. In discussing the mechanism of cattle anaphylaxis recently I [3] made the following observation: "The marked distention of the calf's stomach is particularly interesting inasmuch as it is a striking example of excessive preponderance of smooth muscle in a particular organ which becomes the site of the most intense anaphylactic reaction. The distention must be attributed to spasm of the pylorus and cardia. Stomach contractility finally ceases when the distention becomes excessive."

The allergic phenomenon results from a disturbed physiology, mainly of smooth muscle. It is not strange therefore that the gastrointestinal tract, which is so rich in smooth muscle, should at times be subject to allergic reactions involving its structure. Besides the spasm of smooth muscle, it is conceded that wheal formation may account for some of the pathologic disturbance, and involvement of the vessels of the intestinal wall may explain some of the more serious consequences which not only make the allergic reaction resemble acute appendicitis or intussusception in all essentials but may actually produce these pathologic conditions. Thus the primary reaction may be a spasm or wheal formation, which is followed by edema and vascular congestion of the submucosa and serosa. This in turn paves the way for bacterial invasion and its typical suppurative picture leading to gangrene or perforation. The allergic reaction per se is reversible and the organ returns to normal without residual change. However, if the stage of necrosis is reached the condition then becomes irreversible and the appendical involvement or intussusception must be regarded as pathologic and treated surgically.

To orient ourselves with respect to the allergic phenomenon it should be recalled that: 1. When a protein food is ingested not all of the native albumin fraction is readily broken down into its degradation products by the intestinal enzymes and as a consequence some of it may pass unchanged into the blood stream as a native protein. 2. Sensitization may be acquired in various ways and may affect any part of the digestive tract from the mouth to the rectum. 3. Before an allergic reaction can occur, tissues harboring the allergic antibodies must come in direct contact with native protein; i. e., the tissue must previously have been sensitized. 4. Not only may the surface of the intestinal wall be affected, but, as the protein traverses the wall, the deep layers and vascular structures may become involved.

MODES OF ACQUISITION

1. Food allergy may have its inception in intrauterine life. In some instances the fetus may come in contact with unchanged food proteins via the placenta. Cravings of pregnancy may be responsible for the ingestion of excess protein food. Some of these proteins escape digestion and enter the maternal blood stream, thus gaining access to the fetal circulation through the highly permeable placental membrane.

2. Sensitization may also be acquired via breast milk.

3. Occasional feedings of raw milk during the neonatal period may sensitize the breast fed infant.

4. Overfeeding, whether in infancy or in childhood, in good health or during convalescence from disease, may result in sensitization. This is particularly true with raw or lightly cooked foods.

5. Fad diets, excessive indulgence in seasonal or bizarre foods, may be incriminating factors.

CLINICAL OBSERVATIONS ON ALLERGIC ABDOMINAL PAIN

Among early observations on abdominal pain were those of Moro [4] and of Lust,[5] who described a recurrent colicky pain in the region of the umbilicus ("navel colic"). These authors offered no positive clue as to its pathogenesis. However, Schloss [6] was one of the first to place certain cases of abdominal pain in the category of allergy. He described cases of gastrointestinal allergy without positive cutaneous reactions. These infants regularly developed diarrhea, abdominal pain and vomiting when the smallest amounts of raw whole milk were ingested. Moderate amounts of thoroughly boiled milk were tolerated. Similar observations were later made by O'Keefe.[7]

Evidence that abdominal pain of allergic origin may be present without the confirmatory evidence of a positive skin test was fortified for me when I [8] observed the case of a pair of twins. When these infants were given a raw milk formula, 1 twin developed urticaria

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Read in a symposium on "Abdominal Pain in Children" before the Section on Pediatrics at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

1. Reports have appeared of definite allergic abdominal pain resulting from the use of pollens given orally for desensitization and orally administered vaccines. Allergic episodes may also result from any highly antigenic substance, such as endocrine products or other organic medication. This holds equally true for drug sensitivity to such substances as acetylsalicylic acid, bromides, sulfonamides and quinine.

2. Code, C. F., and Hester, H. R.: Blood Histamine During Anaphylactic Shock in Horse and Calf, Am. J. Physiol. **127**: 71, 1939.

3. Ratner, B.: Allergy, Anaphylaxis and Immunotherapy, Baltimore, Williams & Wilkins Company, 1943, p. 620.

4. Moro, E., in Pfaundler, M., and Schlossman, A.: Handbuch der Kinderheilkunde, ed. 5, Leipzig, F. C. W. Vogel, 1910, p. 19.

5. Lust, F.: Diagnostik und Therapie der Kinderkrankheiten, ed. 7, Vienna, Urban & Schwarzenberg, 1932, p. 177.

6. Schloss, O. M.: Allergy in Infants and Children, Am. J. Dis. Child. **19**: 433 (June) 1920.

7. O'Keefe, E. S.: Protein Sensitivity in Children with Negative Cutaneous Reactions, J. A. M. A. **80**: 1120 (April 21) 1923.

8. Ratner, B.: Food Allergy in Infants, Am. Med. **23**: 868, 1928.

and the other developed abdominal pain, vomiting and diarrhea. Allergic skin tests proved positive to lactalbumin and whole milk only in the infant who developed urticaria; no skin reaction was ever obtained in the infant who had gastrointestinal symptoms. A number of subsequent clinical exposures to milk corroborated these observations. It is a common experience that local organ sensitivity may precede a generalized sensitivity; thus certain tissues of the body (e. g. the intestinal tract in this instance) may be sensitive, while others (e. g. the skin) are not.

In a number of papers Osler [9] described a group of patients with purpura, urticaria and angioneurotic edema who in addition had gastrointestinal symptoms. He noted that abdominal pain was a common symptom and that cases occurred with or without simultaneous cutaneous eruptions. In cases simulating appendicitis, the concomitant cutaneous eruption would tend to rule out a surgical abdomen. In 1914 he [10] pointed out the relation of these abdominal conditions to allergy and serum rashes. This syndrome is often referred to as "visceral erythema or hives." Alexander and Eyermann [11] also observed patients with abdominal pain who in addition manifested urticaria and purpura. A striking similarity to Henoch's purpura was emphasized. Although the elimination of certain foods caused the disappearance of symptoms, positive cutaneous reactions to foods were not obtained.

Laroche and his associates [12] and Rowe [13] in their respective monographs cite cases ranging from mild abdominal discomfort to most intense abdominal crises, associated in certain instances with other allergic manifestations but more commonly showing no other allergic manifestations. As a rule the abdominal pain occurs promptly after eating the offending food, but it may appear from several minutes to an hour after ingestion. These symptoms may persist for several minutes, hours or even longer. When the abdominal symptoms are associated with other allergic manifestations the diagnosis is readily made. However, it is in those cases in which no associated allergic symptoms occur and there is an absence of positive skin tests that diagnostic difficulties arise. Others who have discussed this subject are Bray,[14] Duke,[15] Rackemann,[16] Hollander,[17] Lintz,[18] Alexander,[19] Eyermann [20] and Fries and Merrill.[21]

It might be of interest in passing to mention here the paper of McCarthy and Wiseman,[22] who present provocative evidence that pylorospasm of early infancy and its associated abdominal pain may in certain instances be due to food allergy.

9. Osler, W.: On the Visceral Complications of Erythema Exudativum Multiforme, Am. J. M. Sc. **110:** 629, 1895; On the Surgical Importance of the Visceral Crises in the Erythema Group of Skin Diseases, ibid. **127:** 751, 1904.

10. Osler, W.: The Visceral Lesions of Purpura and Allied Conditions, Brit. M. J. **1:** 517, 1914.

11. Alexander, H. L., and Eyermann, C. H.: Food Allergy in Henoch's Purpura, Arch. Dermat. & Syph. **16:** 322 (Sept.) 1927; Allergic Purpura, J. A. M. A. **92:** 2092 (June 22) 1929.

12. Laroche, G., and others: Alimentary Anaphylaxis, translated by M. P. Rowe and A. H. Rowe, Berkeley, Calif., University of California Press, 1930.

13. Rowe, A. H.: Food Allergy, Philadelphia, Lea & Febiger, 1931.

14. Bray, G. W.: Recent Advances in Allergy, Philadelphia, P. Blakiston's Son & Co., 1934.

15. Duke, W. W.: Food Allergy as a Cause of Abdominal Pain, Arch. Int. Med. **28:** 151 (Aug.) 1921.

16. Rackemann, F. M.: The Importance of Foreign Proteins and Other Foreign Substances in the Etiology of Disease, Internat. Clin. **1:** 56, 1922.

17. Hollander, E.: Mucous Colitis Due to Food Allergy, Am. J. M. Sc. **174:** 495, 1927.

18. Lintz, W.: The Diagnosis and Treatment of 225 Cases of Gastrointestinal Allergy, New York State J. Med. **34:** 282, 1934.

19. Alexander, H.: Localized Allergy, M. Clin. North America **11:** 399, 1927.

20. Eyermann, C. H.: The Dietitian and Food Allergy, J. Am. Dietet. A. **12:** 1, 1936.

21. Fries, J. H., and Merrill, G. A.: Allergic Abdominal Pain in Children, Am. J. Dis. Child. **52:** 1107 (Dec.) 1936.

22. McCarthy, M. P., and Wiseman, J. R.: Pylorospasm, an Infantile Allergic Manifestation, M. Woman's J., December 1937.

DIAGNOSIS

Abdominal pain of allergic origin should always be ruled out whenever abdominal symptoms are present. It may be considered in three categories:

1. *Abdominal pain as a minor symptom.* It may appear with or without an acute attack of urticaria or asthma and usually is of little or no significance. Many children complain of abdominal pain in the course of an asthmatic or urticarial attack.

2. *Recurrent abdominal pain.* This occurs most frequently in children. Many cases give a history of colic and vomiting during infancy. It is usually associated with other dermal or respiratory allergic manifestations. The pain is usually localized in the region of the umbilicus but may also be present in the epigastrium, the paraumbilical region or the right lower quadrant. It is cramplike in character. The pain may last for several minutes or hours and may recur at frequent intervals. There are, as a rule, associated gastrointestinal symptoms such as diarrhea, flatulence, mucous stools, nausea, vomiting or even constipation. Most often this train of symptoms follows the ingestion of a particular food. Concurrent urticaria or asthma may supervene. Fever is as a rule absent but on occasion may be present. Localized tenderness may be present during the attack but is frequently absent. Occasionally a distended colon may be palpated.

A careful history of food dislikes may offer helpful clues. Protein skin tests for foods may be negative if the gastrointestinal symptoms are the only ones present but as a rule are positive if the condition is associated with urticaria or asthma. The eosinophil count may be increased, but this is not usual except in chronic cases. The entire picture may be reproduced by having the patient ingest the suspected food.

3. *Severe abdominal pain simulating an acute surgical condition of the abdomen.* Before a surgical condition of the abdomen can be considered, it is essential to give due consideration to the following points favoring allergy: (*a*) a previous history of gastrointestinal symptoms, or food sensitivities; (*b*) a history of other forms of allergy; (*c*) the presence of eosinophilia; (*d*) severe abdominal pain with physical signs that are atypical or negative. However, as was pointed out, an allergic abdominal disturbance may actually lead to a surgical condition of the abdomen. Therefore, even in the face of an allergic background, if the signs resemble appendicitis or intussusception surgical intervention may become imperative.

In all cases of suspected allergic abdomen, an injection of epinephrine subcutaneously, ephedrine sulfate by mouth or atropine or its derivatives given orally or subcutaneously may promptly relax the allergic spasm and clarify the diagnosis.

ROENTGEN DIAGNOSIS

The most concrete evidence for muscle spasm causing abdominal pain in allergy is afforded by roentgen studies. The findings are mainly those of (*a*) pylorospasm, (*b*) delayed emptying of the stomach and (*c*) hypertonicity and hyperperistalsis of the intestine.

Crispin,[23] in studying a case of angioneurotic edema associated with abdominal pain and hematemesis,

23. Crispin, E. L.: Visceral Crises in Angioneurotic Edema, in Collected Papers of the Mayo Clinic, Philadelphia, W. B. Saunders Company, 1915, vol. 7, p. 823.

observed roentgenologically a lesion situated near the pylorus, which on operation was found to be angioneurotic edema. Christian [24] and Duke [15] were also among the early workers to obtain roentgen evidence of allergic disturbances. Andresen [25] suggested the use of x-rays in diagnosis, as did Gay.[26] In 1927 Eyermann [27] published the first report of the effects of the deliberate feeding of an allergenic food on the function of the gastrointestinal tract. His observation disclosed no effect in the stomach or small intestine but disharmonic tonus in the colon, hypotonus being present in the cecum and ascending colon, and hypertonus in the transverse and pelvic colon. A decidedly spastic transverse colon was demonstrated by Vaughan [28] in a food sensitive patient. Rowe [29] made roentgen studies after specific sensitizing foods were fed and found gastric retention and hypermobility and colonic spasticity. Others using intentional feedings to induce allergic reactions were Serio,[30] Hansen and Simonsen,[31] Hampton,[32] Wing and Smith,[33] and Cooke.[34]

Fries and his co-workers [35] have made most careful and extensive studies in food allergic children. They demonstrated that peristaltic disturbances in the various parts of the gastrointestinal tract followed the feeding of allergenic foods such as egg, milk, nuts and corn. These disturbances were manifested as gastric retention, increased or decreased motility of the gastrointestinal tract, spasm or dilatation of the stomach or intestine. Gastric retention was the most common finding. It was further noted that subjective complaints referable to the gastrointestinal tract usually accompanied the objective findings.

TREATMENT

For the acute episode, the treatment of choice is epinephrine given subcutaneously. It is perhaps wisest to use epinephrine first, to be followed by atropine, belladonna or syntropan orally in order to reduce the incidence of recurrences. It is also of value to use sedation, e. g. paregoric, phenobarbital or bromides, and to continue with a combination of atropine and phenobarbital for a few days following the acute episode.

From the long range point of view the problem must be attacked by ferreting out the offending food. When it has been discovered, it should be completely eliminated from the diet, particularly if taken in the raw state. The incriminating food must be restricted from the diet for a prolonged period. Subsequently small amounts of the offending protein may be reintroduced into the diet until a tolerance is gradually established.

It has been my practice for many years to prescribe an "allergenically denatured diet" to all food allergic patients. This principle of denaturation is based on the fact that heated albumin fractions are coagulated and therefore cannot act as active allergens.[36] This procedure is applicable whether the offending food protein is known or is not known. In the latter case all the foods should be thoroughly cooked. Adequate amounts of ascorbic acid (50 mg.) should be given to compensate for the vitamin C lost in cooking. In the former instance only the incriminating food or foods need be subjected to heat. Following such a procedure (i. e. elimination of all raw or lightly cooked foods), if there are no recurrences of abdominal crises over a period of several months the offending food can be introduced into the diet in the raw state in very small doses, gradually increasing it until tolerance is established. After tolerance is established the offending food or foods should be consumed regularly so that tolerance may be maintained.[37]

CONCLUSIONS

1. Abdominal pain in children may be allergic in nature.

2. Such pain may at times present difficulty in diagnosis. If no other real cause is ascertained, allergy should be suspected.

3. In evaluation of the allergic phenomenon with respect to abdominal pain, the following pathogenesis must be borne in mind:

(*a*) All the native albumin fraction of protein foods is not always readily broken down by the intestinal enzymes and part may pass unchanged into the blood stream and produce an allergic reaction.

(*b*) Sensitization must previously have been established before contact with the offending protein will result in an allergic reaction.

(*c*) Sensitization may be acquired in various ways.

(*d*) The surface as well as the deeper structures of the wall of the digestive tract may be affected.

(*e*) Any part of the digestive tract, from the mouth to the rectum, may be affected.

4. Allergic abdominal pains may be initiated by (*a*) spasm of the gastrointestinal smooth muscle, (*b*) wheal formation in the gastrointestinal wall or (*c*) spasm of the small vessels of the gastrointestinal walls or (*d*) a combination of these factors.

5. As a result of the allergic response, signs of appendicitis or intussusception may be simulated in all essentials.

6. Although the allergic reaction is reversible, if the disturbed physiology is too pronounced or prolonged the harmless allergic reaction may actually be converted into a typical acute appendical involvement or intussusception and should promptly be treated surgically.

7. Pure allergy of the gastrointestinal tract, i. e. uncomplicated by a concomitant eczema, urticaria or asthma, as a rule does not present the diagnostically valuable positive protein skin test.

8. The diagnosis must at times rest on careful historical data relative to the ingestion of certain foods.

9. Of further diagnostic value is the prompt relief from pain from the subcutaneous injection of epinephrine, or from atropine given orally.

24. Christian, H. A.: Visceral Disturbances in Patients with Cutaneous Lesions of the Erythema Group, J. A. M. A. **69:** 325 (Aug. 4) 1917.
25. Andresen, A. F. R.: Gastro-Intestinal Manifestations of Food Allergy, J. M. Soc. New Jersey **31:** 402, 1934.
26. Gay, L. P.: Radiological Demonstration of an Allergic Reaction in the Mucosa and Musculature of the Colon, Am. J. Digest. Dis. & Nutrition **3:** 181, 1936.
27. Eyermann, C. H.: X-Ray Demonstration of Colonic Reaction in Food Allergy, J. Missouri M. A. **24:** 129, 1927.
28. Vaughan, W. T.: Allergic Factor in Mucous Colitis, South. M. J. **21:** 894, 1928.
29. Rowe, A. H.: Roentgen Studies of Patients with Gastrointestinal Food Allergy, J. A. M. A. **100:** 394 (Feb. 11) 1933.
30. Serio, F.: La sintomatologia radiologica della anafilassi gastrointestinale, Riform med. **48:** 1742, 1932.
31. Hansen, K., and Simonsen, M.: Röntgenologische Beobachtung und Darstellung der allergischen Gastritis und des allergischen Pylorspasmus, Röntgenpraxis **9:** 145, 1937.
32. Hampton, S. F.: Henoch's Purpura Based on Food Allergy, J. Allergy **12:** 579, 1941.
33. Wing, W. M., and Smith, C. A.: Spontaneous and Induced Sensitivity to Foodstuffs: X-Ray Studies of the Small Intestine in Man and Guinea Pig, J. Allergy **14:** 56, 1942.
34. Cooke, R. A.: Protein Derivatives as Factors in Allergy, Ann. Int. Med. **16:** 71, 1942.
35. Fries, J. H., and Zizmor, J.: Roentgen Studies of Children with Alimentary Disturbances Due to Food Allergy, Am. J. Dis. Child. **54:** 1239 (Dec.) 1937. Fries, J. H., and Mogil, M.: Roentgen Observations on Children with Gastrointestinal Allergy to Foods, J. Allergy **14:** 310, 1943.
36. Ratner, B., and Gruehl, H. L.: Anaphylactogenic Properties of Milk, Am. J. Dis. Child. **49:** 287 (Feb.) 1935; Anaphylactogenic Properties of Certain Cereal Foods and Breadstuffs, ibid. **57:** 739 (April) 1939.
37. Ratner, B.; Hill, L. W., and Donally, H. H.: Round Table Discussion on Food Allergy in Children, J. Pediat. **16:** 653, 1940.

10. Of further diagnostic value are roentgen findings when a test meal of the offending food is given: (*a*) pylorospasm, (*b*) delayed emptying of the stomach, (*c*) hypertonicity and hyperperistalsis of the intestine.

11. Treatment of the acute episode is best effected through the use of epinephrine given subcutaneously or atropine given orally.

12. Treatment, from the long range point of view, consists in (*a*) discovery of the offending food or foods, (*b*) the elimination of such food or foods or (*c*) the use of incriminating foods in "allergenically denatured" form and (*d*) the building up of a tolerance for the offending foods.

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ABSTRACT OF DISCUSSION

DR. J. VICTOR GREENEBAUM, Cincinnati: The complaint of abdominal pain is a subjective symptom and demands careful analysis of many factors before one makes any final diagnosis, especially the diagnosis of pain due to allergy. Children suffering with anorexia or having pronounced dislike for certain foods often complain of abdominal pain merely on seeing food or on being asked to eat. Breakfast is the most frequent meal for this type of complaint. On the other hand, many children eat foods which they know beforehand are not good for them and which already have caused upsets. Such foods are chocolate, ice cream, excessive amounts of rich candy and the like. These foods produce attacks of abdominal pain, vomiting, chills, high fever, aching muscles and prostration, all of which symptoms are quickly relieved by getting the offending food out of the gastrointestinal tract by physics or enemas. Dr. Ratner's conception of sensitization during the intrauterine period may help to explain many early feeding difficulties which frequently disappear after treatment by the fourth or fifth pediatrician. Either the right food combination is hit on or the infant finally loses its sensitization to the offending food. The later cutaneous and respiratory disturbances, such as eczema, urticaria, dermatitis and asthma, of these infants frequently bear out this diagnosis. Gastric retention in the x-ray, mentioned by Dr. Ratner, is an excellent diagnostic help. Skin tests in my opinion also have been disappointing as diagnostic aids in this condition. Confirming Dr. Ratner's allusion to the pathologic sequels of frequent allergic abdominal attacks, I am permitted by Dr. Philip Wasserman, the pathologist of the Jewish Hospital of Cincinnati, to refer to some unpublished data. Dr. Wasserman is collecting a series of surgical cases of gallbladder and appendix infections the microscopic examination of which shows allergic reactions consisting of edema, plasma cells, and great cellular response of eosinophils in place of the usual polymorphonuclear cells. These happen to be in adults. Subsequent investigations reveal that food allergies were prominent in the past history. Perhaps proper handling of this condition in childhood might have prevented them from occurring. I should like to ask Dr. Ratner to discuss the use of histaminase and pancreatic extracts in the handling of these food allergies which produce abdominal pain.

DR. AMBROSE MCGEE, Richmond, Va.: In the past few years I have been able to collect 21 cases of fetal hiccups. In 5 of these it was possible to give the mother a food and at will to produce the hiccups in the unborn child. These children later were of a highly allergic type or whatever you want to call them. They were always crying, they were hungry or else they were uncomfortable. They had mucus in the stool and rashes, and so on. I believe that milk is the greatest food in the world for those who can take it, but even though it is a basic food there are a few who cannot take it. I have seen too many of them who stopped milk and did better. After they get to the stage where they are on something else besides milk, I think the problem is a little different.

DR. BRET RATNER, New York: Many children who cannot tolerate milk have other allergies besides their milk sensitivity. I have made it a practice to use evaporated milk, thoroughly heated, but always search for other secondary causes of the possible allergy. I for one do not believe that allergy alone causes abdominal pain. The longer I practice allergy the more often I make the diagnosis of no allergy present. Dr. Greenebaum asked the question about histaminase and pancreatic extracts. I should like to answer that question because I think that histaminase has been one of the most fraudulent substances ever presented to the medical profession. Best and McHenry, who discovered histaminase, insisted that this substance was absolutely worthless for clinical medicine. So you see what my stand is. As to the pancreatic extracts in the use of food allergies, it seems to me that the giving of pancreatic extracts or foods that have been broken down by pancreatic digestion is unnecessary. The best method to my mind is to use denatured heated foods, such as thoroughly cooked cereals and cooked eggs. Avoid raw eggs, raw milk, raw wheat, avoid cakes and ice cream, and avoid nuts and fish. Give these thoroughly heated foods and let the pancreatic juices of the intestinal tract, which have a great predilection for cooked foods, digest them. Because the heated food albumins are coagulated, they cannot act as allergens and therefore cannot induce allergic reactions.

BLOOD AND SPINAL FLUID TESTS FOR SYPHILIS IN MALARIAL PATIENTS

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There is practically complete agreement that malaria will be one of the postwar problems in the United States, if not from the standpoint of public health because of mosquito control, then certainly from the standpoint of economic loss and medical diagnosis and treatment. A problem that is usually not considered in relation to malaria is that of the possibility of biologic false positive tests for syphilis. Making a diagnosis of syphilis on a patient in this group may produce greater disaster than the malarial disease itself.

This study was originally undertaken at the suggestion of Lieut. Col. Thomas Fitz-Hugh, medical consultant for the Third Service Command, in an attempt to discover the effects of malaria on the spinal fluid Wassermann reaction. In setting up the procedure it became evident that a blood Kahn and blood Wassermann test taken on the same day would be of value in judging any spinal fluid results. It would also help solve the problem of the incidence of biologic false positive reactions in this disease and indicate safeguards that could be set up before a definite diagnosis of syphilis should be made.

One hundred consecutive malaria admissions had blood and spinal fluid taken within forty-eight hours of entrance to the hospital. These hundred patients gave no history of syphilis and none had had syphilis registers opened on them. Those who had positive or doubtful blood tests had repeat tests done about once a week until negative reactions were obtained. These procedures were performed in the laboratory at the same time that the routine tests for the rest of the hospital were done. Another control on the laboratory technic is the periodic checkup made by the Army with unknown serums. It is realized that quantitative titers

Technician Fifth Grade Clifford Reader performed the Wassermann and Kahn tests.

would have been of great value in this study, but the manpower shortage made it impossible to do this. Since the general practitioner does not use quantitative titers, our study may be of more practical value to him.

TABLE 1.—*Results of Tests*

Positive Tests		
Kahn positive	Wassermann positive	3
Kahn positive	Wassermann doubtful	2
Kahn positive	Wassermann negative	2
Kahn negative	Wassermann positive	5
Total		12
Doubtful Tests		
Kahn doubtful	Wassermann doubtful	4
Kahn doubtful	Wassermann negative	1
Kahn negative	Wassermann doubtful	5
Total		10

SPINAL FLUID STUDIES

The spinal fluid Wassermann reaction was negative in all of the 100 cases. In view of the fact that 12 per cent of the men had positive blood reactions and 10 per cent had doubtful reactions, it appears that the factors which produce the biologic false result in the blood are not present in the spinal fluid. The spinal Wassermann reaction, of course, is of no value in judging whether or not the blood serologic reactions indicate the presence of syphilitic infection.

One spinal fluid had 17 cells, 6 of which were polymorphonuclears and 11 lymphocytes. The total protein in this fluid was 25 mg. and the colloidal gold reaction was normal. The blood Kahn and Wassermann reactions of this patient were negative. The remainder of the fluids had 10 or less cells—a normal finding. There was no explanation for this isolated case.

In 3 cases the total protein was 75 mg. per hundred cubic centimeters. In the remainder it was 50 mg. or less. The colloidal gold reaction, cell count and spinal Wassermann were negative in each of the 3 cases. One of these men had doubtful blood Kahn and blood Wassermann reactions which were negative four days later. The second had a positive blood Kahn and a negative blood Wassermann reaction on admission. The Wassermann reaction remained negative and the Kahn reaction became negative sixteen days later. The third patient had negative blood Kahn and Wassermann reactions.

All of the colloidal gold reactions were within normal limits. In none of the cases that have been cited in which some deviation of the fluid findings from the accepted normal occurred were there any symptoms or signs suggesting neurologic pathologic changes.

BLOOD SERUM REACTIONS

Table 1 shows the breakdown of the number of positive and doubtful tests. It is seen that 12 per cent showed a positive reaction in either or both of the tests used. Ten per cent showed a doubtful reaction. In all these cases the result became negative within thirty days. The doubtful reactions became negative sooner than the positive reactions. Table 2 shows the course of the blood Kahn and Wassermann reactions of these 22 patients. A definite progression from positive to doubtful to negative can be seen in some of the cases. In only 1, case 14, was there a change from doubtful to positive during the course of testing. This patient required the longest time for his reactions to become negative.

This definite evidence of biologic false blood tests led us to two standard textbooks on the subject of serologic tests for syphilis. It was felt that a physician faced with this problem would consult a book of this type in an attempt to evaluate such a finding in his patient. Eagle [1] presents a review of the literature up to 1937 and suggests further study of the problem because of the conflicting reports. These reports vary from an incidence of less than 1 per cent to 50 to 60 per cent. His explanation of such a discrepancy is that in many instances either a flocculation or a complement fixation test was done. In others there was no accurate gage of the incidence of syphilis in the population from which the malarial patients were taken. Kolmer [2] states that the incidence of false positive tests in natural and induced malaria varied from 11.1 to 19.4 per cent.

TABLE 2.—*Course of Positive and Doubtful Tests*

Case	Date	Kahn	Wassermann	Date	Kahn	Wassermann	Date	Kahn	Wassermann	Date	Kahn	Wassermann	Date	Kahn	Wassermann
1	7/ 4	±	0	7/ 9	0	0									
2	7/ 7	±	±	7/11	0	0									
3	7/ 6	+	+	7/ 9	±	0	7/18	0	0						
4	7/ 8	±	±	7/11	0	0									
5	7/ 8	±	±	7/11	±	0	7/18	0	0						
6	7/ 1	0	+	7/11	0	+	7/18	0	0						
7	7/11	+	a/c	7/18	±	+	7/25	0	0						
8	7/ 9	+	0	7/12	+	0	7/18	+	0	7/25	0	0			
9	7/11	+	±	7/18	+	0	7/25	0	0						
10	7/11	+	±	7/18	+	0	7/25	0	0						
11	7/18	0	+	7/25	0	0									
12	7/18	+	+	7/25	+	±	8/10	0	0						
13	7/19	0	+	7/27	0	0									
14	7/19	+	+	7/27	+	±	8/ 3	+	+	8/10	±	±	8/17	0	0
15	7/24	±	±	8/ 5	0	0									
16	7/31	0	+	8/ 7	0	0									
17	8/ 1	0	±	8/ 8	0	0									
18	8/ 3	0	+	8/11	0	0									
19	8/ 4	0	+	8/11	0	±	8/18	0	0						
20	8/ 4	0	±	8/11	0	0									
21	8/ 4	0	±	8/11	0	0									
22	8/ 7	0	+	8/15	0	0									

TABLE 3.—*Result of Test in Relation to Origin of Infection*

Area	Cases	Positive	%	Doubtful	%
Solomon Islands	49	3	6.1	5	10.2
Mediterranean	32	5	15.6	3	9.4
New Guinea	13	3	23.0	2	15.3
Panama	4	0	0.0	0	0.0
West Africa	1	0	0.0	0	0.0
Central Africa	1	1	100.0	0	0.0
Total	100				

1. Eagle, H.: The Laboratory Diagnosis of Syphilis, St. Louis, C. V. Mosby Company, 1937, p. 314.
2. Kolmer, J. A.: Clinical Diagnosis by Laboratory Examinations, New York, D. Appleton-Century Company, Inc., 1943, p. 554.

In the more recent literature, De Groat [3] reports some seropositive cases with the Kahn tests which became negative in one to three months. Kitchen, Webb and Kupper [4] report 30 cases in which inoculation with malaria was performed for therapeutic reasons. Both Kahn and Wassermann tests were done. They found that almost all the patients gave a biologic false positive reaction at some time in the course of the malarial infection. Fellows and Perry [5] report a large survey of patients for syphilis and malaria and found a higher incidence of positive and doubtful reactions in those with either a history of malaria or the presence of parasites in the blood than in the remainder of the population.

Our study tends to overcome some of the objections that might be raised with these reports. All our patients had contracted their malaria by natural means, as opposed to those who were inoculated with the disease as a therapeutic measure. It can be assumed that the incidence of syphilis in our group is zero or as close to that as it will ever be able to estimate for the following reasons: We did not include any soldiers who had had a history of syphilis or for whom a syphilis register had been opened. These men had had at least one test for syphilis on entry into the Army and an indefinite number on occasional hospitalizations. Their minimum time in the Army was two years, during which period each one had had the regular monthly physical examination which would have picked up chancres or skin eruptions of the secondary stage. Other physical examinations were interspersed at various times, such as prior to foreign service, on return to the United States. We feel that such factors would tend to keep the number of missed cases of syphilis to a minimum.

Table 1 also shows that 10 of the 22 soldiers had a change in the Wassermann reaction without a change in the Kahn reaction, whereas only 3 showed the reverse result. This is of interest, since Moore, Eagle and Mohr [6] state that serums that are positive with less sensitive tests and negative with more sensitive ones are probably not syphilitic. These results would constitute additional confirmation of this.

Dauber [7] reports 2 cases in which positive serologic tests were reported several days before the onset of chills, fever and a positive malarial smear. The studies of Fellows and Perry [5] also point to such results without a clinical attack of malaria at the time of taking the blood. Our studies are started during the clinical attack of malaria and offer no clarification of the foregoing. It is hoped that further follow-up will cast more light on this phase of the subject.

No studies have been found on the correlation of the duration of infection or area of origin with the serologic tests. Table 3 shows the breakdown in respect to this factor. The Solomon Islands group had had their clinical infection longest, an average of seventeen months, whereas the New Guinea and Mediterranean groups had had an average clinical duration of nine months.

There is an apparent significant difference between the Solomon Islands group and the New Guinea and Mediterraneon groups, but this may well be fortuitous.

A much larger group of cases will have to be studied before anything significant can be concluded, especially in view of the results obtained by Kitchen, Webb and Kupper.

All our patients had Plasmodium vivax infections with 1 exception. This, the soldier from Central Africa, had a Plasmodium falciparum infection. In the series reported by Fellows and Perry 93.1 per cent had P. falciparum and 6.9 per cent P. vivax infections.

Physicians should be wary of making the diagnosis of syphilis on only one test at any time. In a patient who has had malaria, this is fraught with even more danger, as has been emphasized by others. After an acute attack, at least one month should elapse before taking blood for further testing.

3. De Groat, A.: Kahn Verification Test, J. Lab. & Clin. Med. **28**: 882-885 (April) 1943.
4. Kitchen, S. F.; Webb, E. L., and Kupper, W. H.: Influence of Malarial Infection on Wassermann and Kahn Reactions, J. A. M. A. **112**: 1443-1449 (April 15) 1939.
5. Fellows, S. F., and Perry, W. B.: Syphilis—Malaria Survey, Onslow County, North Carolina, Ven. Dis. Inform. **22**: 237-247 (July) 1941.
6. Moore, J. E.; Eagle, H., and Mohr, C. F.: Biologic False Positive Serologic Tests for Syphilis, J. A. M. A. **115**: 1602-1606 (Nov. 9) 1940.
7. Dauber, T. R.: Importance of Malaria as Cause of False Positive Serologic Reactions, Ann. Int. Med. **19**: 651-655 (Oct.) 1943.

BENIGN PNEUMONOCONIOSIS

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Pneumonoconiosis, according to Gardner,[1] is a generic term to designate all forms of pulmonary reactions to inhaled dust, with no implication as to character, severity or effect on function. Based on pathologic findings, he divides the pneumonoconioses into three principal groups: silicosis and asbestosis, modified silicosis and benign nonspecific pneumonoconiosis.

Silicosis and asbestosis are due respectively to the inhalation of free silica and of asbestos dust. These irritants produce specific pathologic lesions in the lungs.

Modified silicosis is produced by the inhalation of a dust containing a significant amount of free silica with which there is combined a highly concentrated nonsilicious dust, the latter "modifying" the resulting silicosis.

Benign nonspecific pneumonoconiosis, as its name implies, is a term used to designate that condition in the lungs which results from the inhalation of organic or inorganic dusts, which, while they may be retained, are neither toxic, allergenic nor pathogenic. Although they may be capable of producing an insignificant amount of reactive fibrosis, this never progresses to true nodulation. Unlike free silica and asbestos, the presence of these dusts in the lungs produces no symptoms, no disability and no predisposition to tuberculosis. In the words of Gardner [1] "they are known chiefly for their shadows cast on a roentgenogram."

In this presentation we are concerned with benign pneumonoconiosis. In this group have been included baritosis, which has developed in the baryta miners in Italy [2] and in a few workers in Pennsylvania,[3] and siderosis, occurring in electric arc welders.[4]

From the Department of Roentgenology and the Medical Division of the Hospital of the University of Pennsylvania.
Read before the Section on Radiology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.
1. Gardner, L. U.: The Pathology and Roentgenographic Manifestations of Pneumonoconiosis, J. A. M. A. **114**: 535-545 (Feb. 17) 1940.
2. Arrigoni, A.: Pneumoconiosi da bario, Med. d. lavoro **24**: 461-468, 1933.
3. Pendergrass, E. P.: Some Considerations Concerning the Roentgen Diagnosis of Pneumonoconiosis and Silicosis, Am. J. Roentgenol. **48**: 571-594 (Nov.) 1942.
4. Jones, T. R., and Lockhart, J. A.: An Occupational Disease of Electric Welders, Texas State J. Med. **39**: 532-534 (Feb.) 1944. Doig and McLaughlin,[5] Enzer and Sander.[6]

In baritosis [3] the lungs are studded with small sharply circumscribed nodules which in the experimental animal are due to collections of mineral dust and do not show evidence of fibrous tissue overgrowth. Individuals with baritosis have no respiratory symptoms and do not exhibit increased susceptibility to tuberculosis.

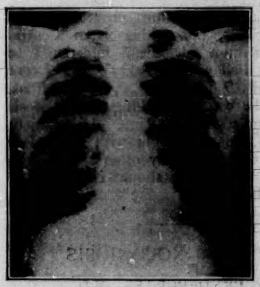

Fig. 1 (M. C., Sept. 14, 1943).—Pseudonodulation due to siderosis. The pseudonodulation is evenly distributed throughout both lung fields. These are much more flocculent and simulate mottling more than any of the other cases. (Because this man had been in the anthracite mines for nineteen years prior to eighteen years spent as a metal grinder, we were unwilling to exclude the possibility of siderosilicosis.)

Without being able to state definitely the nature of the process, Doig and McLaughlin [5] described the roentgen appearance of fine nodulation in 6 of 16 electric arc welders. They considered the possibility of modified asbestosis (the rods of the workers were covered with asbestos) a modified reaction to silica (the rod coating contained sodium silicate), inflammatory changes from the gases and iron oxide dust and the remote possibility that the iron particles themselves might be casting the shadows, in the absence of fibrosis.

Enzer and Sander [6] examined 26 electric arc welders who worked an average of nineteen years with metal containing more than 99 per cent of iron and 0.1 per cent free silica. Bare rods had been used up to three years prior to their study. Five of the workers showed a roentgen appearance simulating prenodular fibrosis, and 5 others exhibited nodular shadows simulating modified silicosis. None of them had respiratory symptoms or were disabled. One of the workers who had shown fine nodulation in both lungs died of lobar pneumonia four days after a traumatic vertebral fracture. Necropsy was performed approximately sixteen months after death. It was stated that the tissues were sufficiently well preserved to permit satisfactory analysis. Throughout both lungs and the adjacent lymph nodes there was fine black pigmentation. The pigment in the lungs was distributed chiefly in the perivascular lymphatics, the subpleural spaces and the interalveolar septums. No fibrosis, no scarring and no phagocytic cells were seen. Although quantitative analysis for iron was not done, the prussian blue test was obtained in the stained sections and in the unstained residue after microincineration. No quartz was identified. The authors concluded that deposition of iron oxide was responsible for the roentgen appearance of nodulation simulating silicosis.

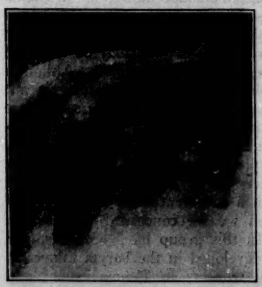

Fig. 2 (M. C.).— Close-up to show details of pseudonodulation.

To the list of recorded instances of benign pneumonoconiosis in baryta miners (baritosis) and in electric arc welders (siderosis) we are adding a group of cases in which we believe that siderosis occurred from prolonged exposure to finely divided iron dust from metal grinding. We have knowledge of 1 other example of benign pneumonoconiosis from a different type of metal processing and there is every reason to believe that, as experience grows, many other instances of benign pneumonoconiosis from metal processing and from other industrial operations will be added to this group.

In September 1943 we were requested to examine M. C., a man aged 53, who for the past eighteen years had been employed as a dry grinder for a bearings company. One month previously fluoroscopy in another hospital had revealed silicosis, he had been told. He considered himself to be in good health until about two years before examination, when he developed dyspnea on exertion, fatigue and gradual loss of weight. These symptoms did not incapacitate him for work. His occupational history was pertinent. He was born in the anthracite region of Pennsylvania, left school at the age of 9 and went to work picking slate in a coal breaker, working sixty hours a week for three or four years. He then became a jig operator for two years, engaged in separating slate from coal by the use of running water. He worked as a laborer outside the mines for several years and then returned to the mines as "fan boy." He then became a coal car operator and a mule driver. He spent nineteen years in the anthracite mines in these various occupations but never mined coal. In 1925 he went to work for his present employer, where he has been engaged continuously as a dry grinder. Physical examination gave essentially normal results except for the presence of slight pulmonary emphysema.

Diagnosis of Pulmonary Condition Found in Eleven Metal Grinders

Name	Age	Occupational History	Roentgen Diagnosis
M. C. (figs. 1 and 2)	53	Coal miner 19 yrs.; grinder 18 years	Modified silicosis (siderosilicosis)
L. B.	34	Grinder 12 years	Siderosis with pseudonodular predominance; pulmonary tuberculosis (inactive)
J. B.	29	Grinder 3 years	Normal chest
E. B.	51	Coal miner 2½ yrs.; grinder 3 years	Normal chest
A. C.	31	Grinder 4 years	Normal chest
W. M.	28	Grinder 4 years	Normal chest
C. P.	29	Grinder 4 years	Bronchosinusitis
F. S.	40	Grinder 13 years	Siderosis with pseudonodular predominance; pulmonary emphysema
A. S.	45	Grinder 14 years	Siderosis with well advanced pseudonodular predominance; pulmonary emphysema
E. S. (figs. 3 and 4)	63	Grinder 17 years	Siderosis with fine pseudonodulation; pulmonary emphysema
E. W.	37	Grinder 7 years	Normal chest

It was our primary impression that this patient by roentgenogram had simple silicosis with nodular predominance.

We have since examined 10 other grinders employed by the same company, and the findings in some of them, together with other information which we obtained, to which we will refer presently, caused us to question seriously our diagnosis of silicosis in the first case. The pertinent data of the 11 cases are presented in the

5. Doig, A. T., and McLaughlin, A. I.: X-Ray Appearances of the Lungs of Electric Arc Welders, Lancet 1:771-775 (April 4) 1936.
6. Enzer, N., and Sander, D. A.: Chronic Lung Changes in Electric Arc Welders, J. Indust. Hyg. & Toxicol. 20:333-350, 1938.

accompanying table. It will be noted that 4 workers who had been grinders for twelve, thirteen, fourteen and seventeen years respectively exhibited roentgenographic evidences of nodular predominance. One man in this group (L. B.) showed a coincident pulmonary lesion, probably tuberculous. He had no clinical manifestations of active infection.

Fig. 3 (E. S., Oct. 16, 1943).—Pseudonodulation in a man who has been a metal grinder for seventeen years. He has siderosis which simulates the pseudonodulation of the welders, except that here they are finer. This appearance may be modified by pulmonary emphysema. The nodules are very similar to those seen in silicosis and rheumatic pneumonitis.

Five employees who had been metal grinders for from three to seven years had normal chest roentgenograms. The remaining worker in this group (C. P.) had been a grinder for only four years. At our examination he had fever, tachycardia and upper respiratory infection with clouding of both maxillary sinuses by fluoroscopy. The roentgenogram showed prominence of the lung markings similar to the shadows of beading or early nodulation. We were inclined to believe that in this case the roentgen appearance was due to bronchosinusitis.

Of the 11 grinders whom we examined, only the first one (M. C.) had symptoms referable to the respiratory tract. He had been in the anthracite mines for nineteen years but had never mined coal. He did not develop respiratory symptoms until sixteen years later, having been a metal grinder continuously for all this time. However, because of his symptoms, occupational history and chest roentgenogram, which showed an appearance more closely simulating mottling than did any of the others, we were unwilling to put him in the benign pneumonoconiosis group, although we could be persuaded easily that he really belonged there. The others, including L. B., who had a coincident pulmonary lesion, probably tuberculous, had no symptoms and considered themselves to be in normal health.

Following these examinations we were granted the privilege of visiting and inspecting the bearings company, where approximately 50 grinders are employed. Seventy-five per cent of the grinding is dry and 25 per cent is wet. The metal ground in the manufacture of bearings is chrome vanadium and chrome molybdenum tool steel containing about 98 per cent iron, about 2 per cent alloy and not more than 0.2 per cent silica. Artificial abrasive wheels composed of bakelite, silicon carbide (carborundum) and aluminum oxide (aloxite) have been used exclusively for the past seventeen years.

Obviously, the metal which was being ground in the manufacture of bearings contained an amount of free silica totally insignificant to be a factor in the production of silicosis. It is accepted that artificial abrasive wheels of the type used in this plant do not constitute a silicosis hazard.[7] Being unable to find any obvious exposure to free silica, we suggested that an engineering study be made of the dust hazard present in connection with the grinding operations at this plant. This was conducted by the Bureau of Industrial Hygiene of the Department of Health of the Commonwealth of Pennsylvania. In summary the findings were as follows:

Procedure.—Dust samples were collected with a mine safety appliance company midget impinger, using distilled water as the collecting medium. Dust counts were made by means of the light field technic. Samples for determining particle size of the dust were collected with an electrostatic precipitator. Rafter samples were collected and used as a basis for determining the percentage of free silica in the atmospheric dust. The dust concentration averaged 4,800,000 particles per cubic foot of air. In regard to particle size of the dust, 96.5 per cent were less than 5 microns and 99.5 per cent less than 10 microns. The average percentage of silica, as quartz, in the dust was 0.43.

From these figures it may be deduced that there is no appreciable silicosis hazard in this plant. Therefore we concluded that, with the possible exception of case 1 (M. C.) the correct roentgenographic diagnosis of 4 other grinders who had worked in this plant for from twelve to seventeen years was benign pneumonoconiosis (siderosis) with pseudonodulation. The roentgen appearance of this condition is similar in all respects to that found in electric arc welders.

It may be of interest in this report, which records the occurrence of siderosis in a group of metal grinders, to refer to a patient who for the past nine years has exhibited the roentgen appearance of pseudonodulation, although he has never been exposed to any industrial dust of any kind:

J. S. was seen first in December 1934 at the age of 19. In 1931 he had chills, fever and hemoptysis followed by dyspnea, palpitation, loss of weight and fatigue. He had recurrence of similar symptoms in December 1934, accompanied by pain in the right lower quadrant, for which appendectomy was performed, but no evidence of acute inflammation was found. On the fourth postoperative day he was transferred to the medical ward suffering from recurrence of acute rheumatic fever with the cardiac findings of mitral regurgitation and stenosis and partial consolidation of both lungs. He was febrile for five weeks, and his sedimentation rate remained elevated four additional weeks.

Fig. 4 (E. S.).—Close-up to show details of pseudonodulation.

The leukocyte counts ranged between normal and 24,000. The blood cultures were negative. The tuberculin test, the Wassermann reaction and agglutination tests for typhoid, paratyphoid and undulant fever were negative. No tubercle bacilli, fungi or spirochetal forms were found in the sputum. Sputum culture showed hemolytic Staphylococcus aureus in great abundance.

Roentgen examination of the chest on Jan. 8, 1935 showed a diffuse process involving the upper two thirds of both lungs resembling a confluent bilateral pneumonitis. On the right there were some rounded shadows such as one finds in nodulation.

Additional roentgen examinations were made of the chest during this hospital admission and many diagnostic possibilities were considered: miliary tuberculosis, fungous infection and a fusospirochetal infection. Passive congestion was excluded

7. Clark, W. I.: The Dust Hazard in the Abrasive Industry, J. Indust. Hyg. 13: 343-346, 1931.

because the lesions preponderated in the upper two thirds of the lung fields.

It was concluded that the most likely diagnosis was rheumatic pneumonitis. In this connection it should be mentioned that Dr. Francis C. Wood, who examined the patient shortly after admission, made a diagnosis of acute rheumatic fever with peritoneal pleural and pulmonary involvement. He was discharged from the hospital feeling well and since then has been followed periodically in the cardiac clinic.

Chest roentgenograms have been made at frequent intervals up to May 1944, and since the first year the changes have been largely those of pseudonodulation.

In order to determine if possible the nature of the lung lesion, which has remained essentially unchanged in its roentgen appearance during the past nine years, it is necessary to consider briefly the pulmonary changes which have been described in acute rheumatic fever and to reconcile these with the present roentgen appearance presented by this patient. According to Gouley and Eiman [8] the specific pulmonary lesion of acute rheumatic fever is nonsuppurative inflammatory vascular damage with perivascular infiltration, for which they suggest the term "perivascular pneumonia." Paul [9] comments on the frequency with which focal hemorrhagic lesions and extremely hemorrhagic alveolar exudate are found at necropsy. He emphasizes that the usual and expected chronic passive congestion would much more likely have involved the lower lobes. Coburn [10] concludes that diffuse hemorrhagic changes are characteristic of activity of the rheumatic process. Sostman [11] states that he has observed several patients with long standing passive congestion from mitral stenosis who have developed a finely nodular roentgen appearance simulating the nodulation stage of silicosis. At necropsy the individual nodules are fibrotic and contain much blood pigment which takes the specific stain for iron. Perhaps it may be found that the roentgen appearance of pseudonodulation in this patient's lungs is due to the shadows cast by iron pigment, the end results of the hemorrhagic perivascular infiltration of acute rheumatic fever. This may be an example of endogenous siderosis from blood destruction.

Fig. 5 (April 6, 1943).—Pseudonodulation in a patient who had acute rheumatic fever with rheumatic pneumonitis in 1934. There is no history of exposure to any occupational dust. The pseudonodulation in the upper two thirds of both lung fields had remained practically unchanged since the first year. The cardiac enlargement is due to mitral stenosis and regurgitation.

COMMENT

Many other conditions besides silicosis and benign pneumonoconiosis may produce a similar roentgen appearance in the lungs. Among these are metastatic cancer, Hodgkin's disease, miliary tuberculosis, lipoid pneumonitis, fusospirochetal disease and fungous infections of various kinds.

Differential diagnosis between pneumonoconiosis of any variety and any of the conditions that have just been enumerated depends largely on the clinical features of the case, a searching history to establish or exclude an occupational exposure to dust, a thorough physical examination and appropriate laboratory studies.

It is impossible for the roentgenologist to tell the difference between the nodulation resulting from the reactive fibrosis produced by free silica in the lung tissues and the shadows of pseudonodulation cast by the opaque substance itself in benign pneumonoconiosis. Therefore, in order to differentiate between silicosis and benign pneumonoconiosis one must have recourse to a most detailed occupational history and, whenever possible, first hand knowledge of the environmental conditions surrounding the worker. Frequently an industrial engineering survey of the plant must be made to determine the nature and concentration of the dust to which the employee is exposed.

Advanced silicosis with conglomerate nodulation is often a disabling disease, and when silicosis is complicated by tuberculosis it is fatal. Asbestosis, when extensive, reduces pulmonary ventilation. This may embarrass the right side of the heart and induce cardiac failure.

Benign pneumonoconiosis produces nothing but "shadows cast on a roentgenogram."

For these reasons it is unfair to the worker, to labor and to industry for the clinician and the roentgenologist to take their responsibility lightly when they are called on to distinguish between silicosis or asbestosis on the one hand and benign pneumonoconiosis on the other.

SUMMARY

To the list of the benign pneumonoconioses previously recorded we are adding 4 cases of siderosis occurring in metal grinders. In this group silicosis has been excluded by eliminating significant exposure to free silica. This has been achieved by knowledge of the composition of the metal ground, by being informed of the nature of the abrasive wheels used, by personal inspection of the plant and by the report of an industrial engineering survey.

We know of 1 other example of benign pneumonoconiosis resulting from the inhalation of a different metal and it is predictable that, as knowledge of this condition grows, many other instances of benign pneumonoconiosis from metal processing and other industrial operations will be added to this group.

It is impossible to differentiate the roentgen appearance of nodulation of silicosis or the pseudonodulation of benign pneumonoconiosis from the shadows cast by many pulmonary diseases unassociated with the inhalation of dust. The diagnosis of the pulmonary lesions in such circumstances depends on the collaboration of the internist, the roentgenologist and the laboratory technician.

To differentiate between silicosis and benign pneumonoconiosis one must have a detailed knowledge of the occupational history, the environmental conditions of the worker and the precise information regarding the nature, concentration and particle size of the dust to which he is exposed.

Advanced silicosis is usually disabling and, when complicated with tuberculosis, it is fatal.

8. Gouley, B. A., and Eiman, J.: The Pathology of Rheumatic Pneumonia, Am. J. M. Sc. **183**: 359-381, 1932.
9. Paul, J. R.: Pleural and Pulmonary Lesions in Rheumatic Fever, Medicine **7**: 383-410, 1928.
10. Coburn, A. F.: Relationship of the Rheumatic Process to the Development of Alterations in Tissue, Am. J. Dis. Child. **45**: 933-972 (May) 1933.
11. Sostman, M.: Personal communication to the authors.

Advanced asbestosis produces disability and ultimately may induce death from cardiac failure.

Benign pneumonoconiosis produces nothing but shadows cast on a roentgenogram.

We owe to the worker, to labor and to industry our utmost efforts to distinguish between these conditions.

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ABSTRACT OF DISCUSSION

COLONEL A. J. LANZA, M. C., A. U. S.: All that casts a shadow on an x-ray film of a working man is not necessarily a disabling disease. That is a lesson some of us learned the hard way, and it needs to be emphasized. The men at the University of Pennsylvania Hospital as far back as 1920 were among the firs: in this country to devote any considerable attention to pulmonary disease among industrial workers. The introduction of x-ray examinations into industry came as a result of pulmonary industrial diseases and their clinical manifestations, which had reached such a point that they attracted general attention; and in the early days we limited our examinations to men who had clinical symptoms and we confirmed our diagnoses by an x-ray film. As the use of the x-rays spread and we became accustomed to seeing films of thousands of apparently healthy persons who were working every day, we began to realize that we would have to change our ideas. We became more and more conservative in our interpretation and more and more insistent that we know the clinical history and especially what type of exposure the individual had experienced not only in his present job but in previous jobs. In dealing with occupational diseases of the lungs it is necessary to build up an occupational history of everything the workman has done since he has left school and gone to work. Otherwise one might fail to find out that perhaps fifteen years before the examination he worked in a granite quarry or in a hard rock mine for a period of years and said nothing about it, and that what one saw on the film might date back a considerable number of years. We began to appreciate the fact that maybe some shadows didn't have any clinical significance. For instance we accumulated a whole series of films out in the Southwest that showed all the appearances of miliary tuberculosis but after we had gathered 125 of them in a small community we realized that there could not possibly be 125 persons with healed miliary tuberculosis in the same community, all of them in the best of health and none ever having been sick. Dr. Pancoast coined a happy phrase that met this situation. He said "Let's not talk about a 'normal' chest. We see normal chests probably only in children. As men grow older and women too you will find all sorts of shadows in their chest x-rays. Let's speak of a 'healthy' chest." If on the basis of increased age and of x-ray technic and interpretation, plus the clinical background and the occupational history of the individual, we can separate those who have a healthy chest from those who have an unhealthy chest, we shall have made a tremendous contribution to the medical practice of industry.

DR. I. S. TROSTLER, Chicago: In examining these chests with the fluoroscope we shall find that the patients with benign pneumonoconiosis will have normal respiratory excursions of the diaphragm, and in those cases we are generally pretty safe in making that as a diagnosis, no matter what the shadows are. One of the early, if not the first, roentgen findings in true pneumonoconiosis is diminution of the respiratory excursions of the diaphragm.

DR. NORBERT ENZER, Milwaukee: Since the report that Sander and I made in 1938 we have had three opportunities to confirm that original observation by postmortems on welders who died of conditions entirely unrelated to their occupation. These cases were identical, and one could exchange and shuffle the slides and not be able to identify them as belonging to any one particular case. The lesion in pulmonary siderosis is entirely a macrophage reaction. The iron pigment is taken up by the macrophages; these localize in the perivascular and peribronchial lymphatics and in the alveolar septums. We could not identify any other reaction in the lungs. There is no other inflammatory response, nothing in the nature of a granulomatous reaction; the macrophages are not converted to fibroblasts. The blood vessels in these lungs show no changes from the normal. When we compare these findings with those occurring in lesions of the lungs which are characterized by granulomatous transformation, the essential feature differentiating the two processes is the absence of a collagenous deposit and all of the steps that go to form collagen; in other words, from the primary response up to the maturation of the fibroblast. Lesions which form collagen ultimately will affect the blood vessels of the lung. I was interested in the reference to the pulmonary findings in mitral stenosis. Our observations on a few such cases are that those lesions may be due to organization of macrophages filled with hemosiderin. It is possible to recognize benign pneumonoconioses, particularly siderosis, by applying our knowledge of what goes on in the lung and interpret the film from that point of view. There are some differences. We have read correctly eleven out of twelve unidentified films as coming from welders. If one studies the shadows carefully, particularly in a film that is magnified, the shadows are not solid—they are ringlike. They have a tendency to undulate in an irregular linear fashion. Pulmonary siderosis causes an accentuation of the architecture of the lung in contrast to those pneumonoconioses in which fibrous formation cause a displacement or replacement of lung tissue. In the latter there seems to be a solid formation, a solid nodule; in the former the pulmonary alveoli are accentuated by the deposit of iron, thus bringing out the spongy architecture of the lung.

THE MALE CLIMACTERIC

REPORT OF FIFTY-FOUR CASES

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Both the human male and the human female have a pituitary-gonad relationship. In the girl at puberty the anterior pituitary gonadotropic hormone stimulates the ovaries to function, with the development of a graafian follicle and the production of an ovum. The granulosa cells lining the follicle produce estrogenic hormone, which in turn stimulates development of the breasts, the internal and external genitals and the configuration of the body, which changes from that of the girl, through adolescence to womanhood.

In the boy at puberty the anterior pituitary gonadotropic hormone stimulates the testicles to function. The interstitial cells of the testicles produce androgenic hormone, which causes development of the secondary sexual characteristics and initiates the changes that develop him from boyhood through adolescence to normal manhood.

The most obvious and fundamental difference which occurs as a result of this pituitary-gonad relationship in the human male and female is the fact that the normal woman menstruates.

Menstruation is the end result of a periodic preparation of the uterine mucosa to receive a fertilized egg. If pregnancy does not occur, hormonal interactions result in uterine bleeding. This periodic preparation of the uterine mucosa is necessary in the woman for propagation of the species and is obviously not necessary in the man.

The menstrual cycle may be looked on as an extra phenomenon in the woman and not as an occurrence necessary to her sense of well-being. If the uterus is removed and the ovaries are healthy and their function

The Roche-Organon, Inc., Nutley, N. J., supplied generous amounts of testosterone propionate (Neo-Hombreol).

Read before the Section on Miscellaneous Topics, Sessions for the General Practitioner, at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

is not disturbed, her pituitary-gonad relationship will continue as it does in the man and she can and will feel perfectly normal until the climacteric is reached.

It follows, then, that cessation of menstruation is not the climacteric and is not of such great importance as was formerly supposed. Cessation of menstruation is only visible evidence in the woman that there is beginning decrease or cessation of her ovarian function. The climacteric syndrome is the result of the endocrine imbalance and not the result of the menstrual disturbance.

As a result of the overemphasis which has been placed on the cessation of menstruation in the woman, and because the man does not have this phenomenon, it was believed that the man did not have a climacteric. There is absolutely no basis for the belief that the man does not have a decrease in sex function in later life and that he cannot have a climacteric. Probably a greater number of men than of women pass through the climacteric without any evident disturbance. However, this inference may be based on the fact that knowledge of the occurrence of this syndrome in man is of very recent date and that the condition possibly has been overlooked or ignored. The climacteric usually occurs later in men than in women. The average age of onset in women is about 40.8 years, and in men it occurs from approximately 45 to 55 years.

It is also a well established fact that neither the man nor the woman need be of climacteric age to develop typical climacteric symptoms. If a girl has her ovaries completely removed at 25 years of age she will have the typical syndrome; under similar circumstances the man will have these symptoms.

The endocrine imbalance in which the gonad hypofunction seems to be the chief factor, in conjunction with the anterior pituitary, disturbs the equilibrium of the two divisions of the autonomic nervous system with the resultant climacteric syndrome. These symptoms may vary from mild to extremely severe, in which latter instance the patient may develop climacteric psychosis (involutional melancholia).

In previous articles[1] the symptoms in the woman and in the man which accompany gonadal hypofunction or afunction, whether they are due to castration, insufficient gonad response or the climacteric, were outlined and described.

SUBJECTIVE SYMPTOMS

Since the climacteric is the result of a neuroendocrine imbalance, it is necessarily functional. The subjective symptoms accompanying gonadal hypofunction render the patient more uncomfortable than do the objective signs. As reported for the female, the symptoms in the male may be classified as (1) nervous, (2) circulatory and (3) general, as shown in the accompanying tables. A proper evaluation of the significance of these symptoms is the chief basis for a diagnosis. That these symptoms may be more easily recognizable, they will be described as they have been presented to me by a large number of patients of both sexes.

NERVOUS SYMPTOMS

All patients complained of an intense subjective nervousness or a feeling of tension. There is a sensation of an inward tremulousness, which usually does not become manifest as a tremor. This is especially noticeable on arising during the night or in the morning. Excitement or fatigue accentuates it, and then a tremor may be noticeable, which should not be attributed to hyperthyroidism.

Nervous people are irritable and they are easily aggravated or excited to anger by word or deed. Noises of playing children, the radio, almost anything stirs them to action. In fact, they need no special stimulus. They are hard to please, and frequently the family or associates say that they can hardly get along with them. Many patients acknowledge this condition but state that they cannot help being so.

Excitability is a nervous state in which the persons respond to ordinary stimuli in an exaggerated manner, especially as regards the psychic response. Unfavorable news, slight mishaps, arguments, all manner of little occurrences that would not disturb a normal person cause quite a nervous and mental flurry.

A large majority of these patients complain of sleeping poorly. They may be restless, sleeping only for short intervals during the night. Some fall asleep quickly on retiring, only to awake within a half hour and remain awake for varying lengths of time. Others do not sleep on retiring until after midnight. Some complain that they sleep well until 2 or 3 a. m. and then remain awake until morning. Patients who do not sleep at night find themselves exhausted the next day and must sleep during the daytime. This desire to sleep during the daylight hours must not be confused with somnolence.

Numbness and tingling of the hands, feet or one or more of the extremities often occurs. Frequently these people awake while lying in bed and find the extremities completely numb. Some have stated that they had to sit up and rub their arms or legs, and one person awakened and arose to go to the bathroom and fell to the floor because the feet were numb. Formication, a sensation as if ants or insects were crawling over the skin, especially on the back and body, is frequently complained of. There may be itching, prickling or tingling of the skin.

Headaches of various types and location occur but are rarely migrainous. They may be described as a dull to severe ache, usually not neuralgic, and may occur irregularly or be continuous. Their location may be temporal, frontal, vertex or occipital, with any combination of these. There are two types of headaches which have almost specific diagnostic importance in gonadal hypofunction: vertex and occipitocervical. The occipitocervical ache may radiate to the neck, over the scapular regions or down the spine. It may last from hours to several days and, when present, the patients complain that their mind seems hazy or fogged, and this mental haziness may last for days. The vertex ache is frequently described, as if a great weight were resting on the head, or as a feeling of pressure.

There is decreased memory and ability for mental concentration. Cerebration is slowed, and they are forgetful, especially for recent events. If they read an article they cannot tell what they have read and must reread it several times before it registers; names, figures and dates are especially difficult to remember.

Depression or mild melancholia is an important symptom; when this is present the patients have loss of interest in their work, in their home or in their past pleasurable diversions; they want to avoid people and may cry for no special reason. They realize that there is something wrong within themselves, they

1. Werner, A. A.: Syndrome Accompanying Deficiency or Absence of the Ovarian Follicular Hormone, Endocrinology **19**: 695 (Nov.-Dec.) 1935; The Male Climacteric, J. A. M. A. **112**: 1441 (April 15) 1939; The Male Climacteric: Additional Observations of 37 Patients, J. Urol. **49**: 872 (June) 1943; Endocrinology: Clinical Application and Treatment, Philadelphia, Lea & Febiger, 1943; Symptoms Accompanying Ovarian Hypofunction.[2]

become introverts and they are ill at ease, have fear of some impending danger and worry unnecessarily. One man worried and cried while at work because he thought that his wife might smoke cigarets while he was away. There is a loss of self confidence and a feeling of futility. At this stage of the condition these patients verge on psychosis, may be self accusatory, may have thoughts of self destruction and may actually commit the act. This extreme stage has previously been referred to as involutional melancholia; it is a psychosis but of definite endocrine origin, as just described.

CIRCULATORY SYMPTOMS

Hot flushes are characterized by a sudden redness of the face and neck, upper chest and at times most of the body. This is akin to blushing and is due to dilatation of the superficial capillaries of the skin. It is a very uncomfortable sensation, generally of short duration, but it may last half an hour or even longer, if the statements of some patients are correct. Frequently this is described as a smothering sensation. Profuse perspiration may accompany the hot flushes. Chilly, creepy sensations occur at times, and these are the counterpart of hot flushes. There may be vertigo and scotomas or tingling or prickling sensations over the head, neck and body. Occasionally hot flushes may accompany disturbances of the cardiovascular system, especially arteriosclerosis with hypertension, but these conditions can be eliminated by proper diagnosis.

Tachycardia, palpitation and dyspnea, more than usual on moderate effort, without evident cardiorenal disease is complained of. Walking a short distance, ascending a flight of stairs, almost any moderate effort causes cardiac consciousness. Many of these patients have this group of symptoms occur while sitting quietly or even while lying in bed. At times they are awakened from their sleep by tachycardia and palpitation.

Vertigo, especially with change of position, is often noticed, with no cardiovascular condition to account for it. Vertigo, tinnitus and scotomas are usually associated symptoms; of these vertigo occurs most frequently. Scotomas may occur as dark, red or silvery specks floating or dancing before the eyes.

Cold hands and feet at any season are complained of by many of these patients. The pulse is usually not affected much unless there is some intercurrent condition, and the blood pressure may be increased in an occasional patient, perhaps the result of nervous tension.

GENERAL SYMPTOMS

Lassitude and fatigability are often present. Some of these people state that there is pronounced decrease of endurance, and they fatigue easily. Others complain that they are constantly tired or that on arising in the morning they are unrested or feel more tired than when they went to bed.

Vague pains are complained of, and their location may be as legion as the distribution of the nervous system. However, when a patient complains of pain, one must make a definite effort to determine its significance before it is lightly dismissed.

Potency is something apart from libido. Potency is more easily determinable in the male than in the female for obvious reasons. Libido in a large degree depends on the mental reaction and may be present in the absence of potency. I have had quite a few women state that libido was more pronounced during the menopause than at any other time in their life. This can be easily explained in both sexes because libido operates through the conscious mind. In many instances the decline or loss of potency and the persistence of libido causes many men to consult the physician.

Constipation is frequently found in hypofunction of the thyroid and pituitary glands in which there is a relative vagotonia. Many of these patients complain of a gastric syndrome characterized by distention and eructation after meals with no organic lesions. This is probably secondary to the nervousness and the constipation and usually disappears with sedation and proper elimination. While some cases of constipation may have a glandular basis, the vast majority are probably due to improper habits, diets, gastrointestinal disease and other conditions.

STUDY OF FIFTY-FOUR PATIENTS

The symptoms that accompany the male climacteric are shown in the tables. It is well to remember the fact that these symptoms not only accompany the climacteric but may be present at any time in some individuals when there is much decrease or failure of gonadal function during active sexual life.

In this group of patients there were 2 having cryptorchism and eunuchoidism, 3 having hypogonadism,

TABLE 1.—*Frequency of Nervous Symptoms*

	Per Cent
Nervousness, subjective	100.0
Irritability	63.0
Excitability	50.0
Depression	85.0
Crying	37.1
Decreased memory and concentration	79.8
Loss of interest and self confidence	61.1
Fear of impending danger, ill at ease and worry	50.1
Desire to avoid crowds	22.2
Personality change, unsociable	24.1
Self accusatory	3.7
Feeling of futility	27.7
Thought of self destruction	39.4
Suicide attempted (2 persons)	
Psychoses	14.8
Sleep disturbed	65.5
Occipital cervical aching	46.3
Headache	44.4
Itching	31.4
Formication	13.0

1 having surgical and postoperative testicular atrophy and another having testicular atrophy as a result of x-ray treatment, 44 in the male climacteric and 3 having climacteric psychosis. The age of these patients considered, as a whole, ranged from 41 to 64 years; the average age for the group when they first sought medical attention was 50.5, which is much later than the average age for the onset of climacteric symptoms (40.8 years) reported in 1931 in a study[2] of 197 women having ovarian hypofunction or afunction, 96 of whom were in the menopause.

Nine of these patients were single, 41 were married, 2 were widowers and 2 were divorced. The average height was 65½ inches (166 cm.) and the average weight was 155 pounds (70 Kg.). Obesity was strikingly less frequent in this group of men than in a similar group of women; only 8, or 14.8 per cent, were overweight, whereas 34 per cent of 197 women were obese. This paucity of obesity in men as compared to women may be due to several influencing factors, chief among which may be (1) that men are more active physically than women and (2) that women during the menacme, during each menstrual period and during and at the end of gestation are subjected to a tremendous glandular readjustment to which men are not sub-

2. Werner, A. A.: Symptoms Accompanying Ovarian Hypofunction, J. Missouri M. A. 28: 363 (Aug.) 1931.

jected; frequently in women this readjustment does not completely occur, with consequent menstrual disturbances and obesity.

The average pulse rate was 72 per minute; the average blood pressure was 129/83 mm. of mercury. The highest systolic pressure found in any individual was 190 and the lowest diastolic pressure was 65.

TABLE 2.—*Frequency of Circulatory Symptoms*

	Per Cent
Hot flushes	33.3
Chilly sensations	33.0
Sweating	37.7
Vertigo	44.4
Scotomas	25.9
Tinnitus	14.8
Numbness and tingling	37.4
Cold hands and feet	37.7
Tachycardia, palpitation and dyspnea	42.6
Pulse, average per minute	72
Blood pressure, average	129/83
Highest systolic, mm. of mercury	190
Lowest diastolic, mm. of mercury	65

The average basal metabolic rate was + 6 per cent in 5 patients, 0 per cent in 4 and — 17 per cent in 38. That this group of symptoms is not due to hypothyroidism is evidenced from the clinical experience of many observers, by the fact that patients having plus or minus metabolic rates have the symptoms and that they are not relieved by thyroid medication. Many of these symptoms when considered individually may accompany other conditions, but when a proper diagnostic survey fails to reveal any abnormality to account for them they must be evaluated from a functional point of view, especially endocrine.

Decrease or loss of potency was admitted by 90.8 per cent, and the remainder said "no."

Libido was decreased or absent in 45.4 per cent, 29.6 per cent answered "yes and no," and 14.8 per cent stated that it was unchanged. In 5 patients this information was not obtained.

Thirty-eight patients received intramuscular injections of 25 mg. of testosterone propionate every other day, omitting Sunday. Of these, no subsequent report was obtainable on 2; of the remaining 36, all were benefited by relief of symptoms and a sense of well-being.

REPORT OF CASES

So that the hypogonadal and climacteric syndrome in the male may be made more easily recognizable, the following type cases are described: (1) cryptorchism, bilateral, (2) castrate, (3) hypogonadism, (4) climacteric and (5) climacteric psychosis. All irrelevant and negative information will be omitted from the protocols for brevity.

The following is a case of bilateral cryptorchism with mild hypothyroidism:

CASE 1.—L. R., an unmarried man aged 52, showed intense subjective nervousness, depression and crying, decreased ability for mental concentration and memory for recent events, forgetfulness and severe occipitocervical aching, accompanied by mental haziness. The testicles had never descended and were not palpable in the inguinal canals. He was fatigued most of the time and arose in the morning unrested. Sleep was restless and he perspired much at night. Constipation was very troublesome. He began to gain weight rapidly at 27 years of age. He had never been severely ill and had not had any operations.

His height was 70 inches (178 cm.) and his weight was 234 pounds (106 Kg.) nude. The skin over the entire body, face and extremities was sallow, pastylike and scaly. There was much adiposity over the trochanters, hips, suprapubic region and the mammary areas, and only a sparse amount of pubic hair was present. The bodily configuration showed the effect of the lifelong deficiency of gonadal function; the general appearance was than of a eunuch instead of eunuchoidism. The pulse rate was 84 and the blood pressure was 165/120. The penis was 3 inches long, was small and had a long prepuce. The testicles were not palpable and the scrotum was small, flat and wrinkled. The prostate was not palpable because of failure to develop.

The hemoglobin, red and white cells and the blood picture were normal. The fasting blood sugar was 112 mg. The urine was normal.

The basal metabolic rate was — 15 per cent. The patient had taken 2 grains (0.13 Gm.) of desiccated thyroid for years, without any change in the condition described.

Twenty-five mg. of testosterone propionate in oil was injected intramuscularly every other day for three months. After three or four injections he began to feel better, and at the end of three weeks he was having many erections. The skin of the entire body changed from a pale sallow to a bright pink. The penis developed to 4 inches in length and 1 inch in diameter when flaccid. He stated that he felt "fine and vigorous."

The following patient was a castrate; one testicle was removed and the other atrophied from x-ray treatment:

CASE 2.—W. G., a man aged 40, married, had been operated on at 32 years of age, his right testicle being removed because of a suggestive nodule which it contained. Following this removal he received high voltage x-ray therapy eight times to the pelvic region and he stated that the left testicle was not protected. During the next two years the left testicle atrophied, and when he was examined it was small and soft.

As a result of the operation and atrophy there developed intense subjective nervousness, frequent hot flushes followed by profuse perspiration, depression and crying with decreased memory and ability for mental concentration; he could hardly remember anything. He stated that he had a feeling that he was losing his nerve and confidence in himself and that it was an effort for him to think and talk extemporaneously. He was ill at ease, felt anxious and had some unexplainable feeling that something would happen, without good reason.

He was exhausted most of the time, and it was an effort to work. There was a loss of interest in his usual activities. He had tachycardia, palpitation and dyspnea on light effort. He had occipitocervical aching most of the time, and this was becoming worse, with frontal aching just above the eyes. He also had some sacroiliac soreness, which was annoying. At times he slept well and then again he had periods of disturbed sleep. He had an erection and coitus about once every six weeks but usually was unable to complete the act. Most of these symptoms had been present since the x-ray therapy six years before.

TABLE 3.—*Frequency of General Symptoms and Signs*

	Per Cent
Fatigability and lassitude	70.4
Potency decrease or loss, admitted	90.8
Libido:	
Loss	7.4
Decreased	38.0
Yes and no	29.6
No loss	14.8
No information on 5 patients	
Vague pains	22.2
Constipation	42.6
Obesity (moderate)	10
Social status:	
Single	9
Married	41
Widower	2
Divorced	2
Height, average	66.5 inches
Weight, average	150.5 pounds
Age of climacteric patients	41 to 64 years
Average age	50.5 years
Basal metabolic rate (average)	5 = +6% 4 = 0% 38 = −17%

His wife and 2 daughters were living and well. The family, personal and past histories as far as they related to his present condition were negative.

His height was 69 inches (175 cc.) and his weight was 173 pounds (78.5 Kg.) nude.

Physical examination revealed nothing abnormal, except that there was a long scar paralleling the right inguinal region. The right testicle was absent and the left was small and soft.

TABLE 4.—*The Male Climacteric Syndrome: Order of Frequency of Symptoms in Fifty-Four Patients*

	Per Cent
1. Nervousness, subjective	100.0
2. Potency decrease or loss, admitted	90.8
3. Depression	86.0
4. Decreased memory and concentration	79.8
5. Libido, absent or decreased	75.0
6. Fatigability and lassitude	70.4
7. Sleep disturbed	65.5
8. Irritability	63.0
9. Loss of interest and self confidence	61.1
10. Numbness and tingling	57.4
11. Excitability	50.9
12. Fear of impending danger, ill at ease and worry	50.0
13. Occipitocervical aching	46.3
14. Headaches	44.4
15. Vertigo	44.4
16. Tachycardia, palpitation and dyspnea	42.6
17. Constipation	42.6
18. Crying	37.1
19. Hot flushes	33.3
20. Chilly sensations	33.0
21. Itching	31.4
22. Sweating	27.7
23. Feeling of futility	27.7
24. Cold hands and feet	27.7
25. Scotomas	25.9
26. Personality change, unsociable	24.1
27. Desire to avoid crowds	22.2
28. Vague pains	22.2
29. Thoughts of self destruction	20.4
30. Psychoses	14.8
31. Tinnitus	14.8
32. Formication	13.0
33. Self accusatory	3.7
34. Suicide attempted, two persons	

The prostate was moderately decreased in size and showed increased firmness and was not tender. The prostatic fluid did not contain pus or spermatozoa.

The heart was normal, the action was regular, the pulse was 72 and the blood pressure was 120/75.

The blood and urine were normal for all the usual tests. The basal metabolic rate, two tests, was 0 per cent in each instance.

The diagnosis was castrate right side, testicular atrophy left side.

The patient was given 10 mg. of testosterone propionate, injected intramuscularly every other day, omitting Sunday. Two months later he reported that the symptoms were very much relieved and that a lumbosacral soreness, which he had had, had disappeared. He had been having erections twice a week. He had more energy, could work better and felt like taking active exercise.

With our present knowledge it would have been better to give this patient 25 mg. dosages instead of 10 mg.; the response would have been more rapid and satisfactory.

The following was a case of hypogonadism:

CASE 3.—W. S., a man aged 37, began his career as an office boy at 16 years of age and later became a salesman for the same firm, which position he held when he sought consultation.

For the past four years he had noticed decreased libido and potency. He had been very subjectively nervous and depressed, had become introverted and worried unnecessarily about himself. He was apprehensive, had decreased memory and concentration and loss of interest in his activities at home and in business and felt that he could not hold his position. He was ill at ease and had a fear of impending danger. He tired easily, and it required an effort to continue at his work; he tried to avoid company and became excited if he got into a group of people. He was subject to vertex headaches, vertigo with change of position and tinnitus. He had tachycardia and palpitation, even while lying in bed. There was numbness and tingling of the extremities at times. He could not sleep after midnight and suffered from constipation. He had never been seriously ill and had had no operation.

He married at 20 years of age, and the wife and 2 children were living and well.

The family history was negative.

His height was 67½ inches (171 cm.) and his weight was 139 pounds (63 Kg.) nude. He was apparently normal physically, the heart seemed normal, the pulse rate was 66, lying down, and the blood pressure was 132/85.

The external genitals were normal, and the testicles had normal consistency.

The usual blood and urine tests were normal, and the basal metabolic rate was —7 per cent.

The diagnosis was hypogonadism, which could have been secondary to pituitary hypofunction or failure of the testes to respond normally to gonadotropic stimulation.

Twenty-five mg. of testosterone propionate was injected intramuscularly every other day, omitting Sunday. After two weeks he stated that he felt much better and slept soundly. At the end of one month he felt very well.

CASE 4.—H. K., a man aged 49½, married, a broker, had noticed himself "slipping" in several ways during the last eighteen months. He had decrease of libido and potency, which had been pronounced in the last two months. He was very nervous subjectively, irritable and excitable and at times felt like screaming. He was depressed and had a feeling of frustration, and he stated that he thought of suicide about six times. He had decreased memory and mental concentration and lost his train of thought while talking. He was ill at ease and had a feeling of some unexplainable danger. There was a loss of self confidence. He had occipital-cervical aching for almost one year, and his mind seemed hazy. He had vertex headache frequently and constant tinnitus for the last eighteen months. He also had a feeling as if he would faint if he turned his head to the left and had to snap it right back. Pressure on the carotid plexus did not elicit this symptom. He fatigued easily and was exhausted after a day's work. He slept poorly and lay awake for hours. He had tachycardia, palpitation and dyspnea on moderate effort, and this also occurred while he was lying quietly in bed. The hands and feet were cold, and there was numbness in both arms and generalized itching. He had hot flushes, especially when nervous, followed by profuse perspiration. At times he had felt as if a hot pad was applied to one or both thighs. He had distention and eructation after meals and felt as if there was a lump in his stomach.

His height was 66 inches (168 cm.) and weight 147 pounds (67 Kg.) nude. The hair was dry, but the skin had normal moisture. The heart was normal in size, the action was regular and there were no abnormal sounds. The pulse was 72 and the blood pressure was 120/75 mm. of mercury. The external genitals were normal and the testes had normal consistency. The prostate was about normal in size and slightly increased in consistency.

Examination of the blood and urine showed all tests to be within normal limits. The basal metabolic rate was minus 21 per cent on two tests.

He was given 25 mg. of testosterone propionate injected intramuscularly every other day, omitting Sunday. He was given 2 grains (0.13 Gm.) of thyroid daily.

After two weeks' treatment he stated that he felt very well and that libido and potency were increased. The treatment was continued for two months.

The following patient had climacteric psychosis (male involutional melancholia):

CASE 5.—A man aged 58, married, became depressed about eighteen months before he came under observation and had decreased memory and concentration and loss of interest in his work and other activities. He was fatigued and had numbness and tingling of the extremities, even while lying in bed.

His condition became gradually worse. He could not work, seemed terribly worried, did not want to see any one and would not talk but would hold the newspaper in his hand for long periods without turning a page or would stare out of a window with a blank expression.

At that time he attempted suicide by inhaling gas and was taken to a sanatorium, where he remained for several months without improvement.

He was then given 25 mg. intramuscular injections of testosterone propionate every other day. Within two weeks he made decided improvement and stated that he felt "very fine." He also stated that he had accentuated sexual stimulation, which had been absent for two years; this statement was corroborated by his wife. After one month of this treatment he was cheerful but very talkative and wanted to go to work. At the end of the second month he was allowed to resume his work and got along nicely.

COMMENT

This report represents a study of 54 male patients, each of whom had one of the types of testicular hypofunction or afunction, which is, or can be, the etiologic factor in producing the hypogonadal or climacteric syndrome. With the exception of menstruation in the female, it is the same for the two sexes.

The symptoms have been discussed, so that the syndrome may be easily recognizable.

Testosterone propionate, by intramuscular injection of 25 mg. three times a week, has been found effective in relieving the symptoms and in the production of a sense of well-being in the patients, which is the primary objective of this treatment. This medication should be administered for two or three months. The patient may feel very well within a few weeks, but it is best to continue beyond this time for the purpose of stabilization. Testosterone may also be given orally, by inunction and by implantation. The effective oral dosage is three to eight times greater than by intramuscular injection. Inunction of testosterone is not so satisfactory. By implantation, one has no control of dosage.

Testosterone should not be given for the purpose of stimulating potency. While it occurs in some patients, this result cannot be promised and it is perhaps better for older men if this phase of the reaction does not result.

It is important that the duration of the climacteric be stressed, since it varies in different individuals. Some pass through this without much appreciable difficulty; some may have trouble for three to six months, and in others the period for permanent endocrine equilibrium to occur may be from one to four or five years. The latter group will need intermittent treatment for one to three months when aggravating symptoms recur.

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ABSTRACT OF DISCUSSION

Dr. Charles W. Dunn, Philadelphia: The constitutional attributes of testosterone supersede its sexual stimulatory powers. This can be established in any male eunuchoid or castrate. The administration of estrogen to a male castrate suppresses the flashes and drenching sweats and relieves the other vasomotor reactions but does not relieve the energy deficit or establish the sense of well being. Only male hormone therapy accomplishes both therapeutic responses in the male castrate. When testosterone is administered to male hormone deficiency patients in dosage proportionate to their deficiency—including the climacteric—the initial therapeutic response is constitutional. The male climacteric is a deficiency state of the body and must be so treated and corrected if it is desired to obtain symptomatic control. Dr. Werner stated that 2 of his patients attempted suicide; 4 of my patients attempted suicide, and 1 succeeded. The male climacteric is an important syndrome because it occurs chiefly in men with important responsibilities, men who require sustained energy, physical and mental, throughout the day to perform competently their assigned responsibilities. The progressive loss of physical and mental energy which the male climacteric experiences is the substratum on which major mental symptoms develop and precipitate the inferiority and inadequacy complex. The male climacteric requires therapy and adequate therapy. The dosage varies with the duration of the disturbance, the type of symptoms, their extent and their intensity. The initial dose should be maximal, 25 to 50 mg. two or three times a week for from two to four weeks. As the constitutional responses, disregarding sexual, are obtained the dose is reduced. The true climacteric patient is more concerned with constitutional rehabilitation than he is with sexual stimulation. Occasionally full testosterone therapy does not relieve the headache and suboccipital pressure pain. The administration of 6,000 rat units of estradiol benzoate every fourth day in combination with the testosterone for two or three doses relieves the symptoms.

Dr. Benjamin F. Sieve, Boston: Dr. Werner and his associates have emphasized that the cessation of menstruation in the woman is a side phenomenon that necessarily must occur at this time. However, in my experience the climacteric syndrome may precede by years the cessation of menstruation. Therefore one has to define and diagnose rather obscure symptoms to determine the onset of the climacteric syndrome in both the female and the male. In the female the cessation of menstruation is solely the indication of the termination of the reproductive period. I agree with Dr. Werner in that the male climacteric syndrome is a clinical entity which we are now able to diagnose and correct. In my experience the average age of onset is in the early forties. Many cases are seen early, in the third decade of life. Since external influences, particularly on the nervous system, seem to precipitate the onset of the syndrome, it is most likely that as a consequence of the war with all its ramifications many more early cases will be seen from now on. Aside from the androgens, the estrogens have also an important role in the therapy of the male syndrome. The role of the vitamin B complex therapy in the female and male syndrome is not fully understood at present. It seems that the vitamin B complex enhances the synthesis of the hormones.

Dr. August A. Werner, St. Louis: Fatigue and lassitude are symptoms common to hypothyroidism, but they are also common to the climacteric syndrome, without hypothyroidism, and they disappear on treatment with testosterone and without thyroid medication. It is known that the male and female secrete both estrogenic and androgenic hormones, but in the female the estrogenic hormone preponderates and in the male the androgenic hormone is in the ascendancy. I can see no reason for complicating the treatment of these conditions in the man or the woman. One cannot go far wrong by using nature's method, by giving the woman estrogens and the man androgens. However, there is one caution to be observed in giving the man androgens, and that is the condition of his prostate. If the prostate is large or is giving some trouble, estrogens are indicated. This is one example of where good medical and clinical knowledge and intelligence are needed. No potent drugs should be purchased over the drug counter for self medication. Dr. Sieve spoke about these symptoms occurring in the third decade. This syndrome can occur during any period of active sexual life, from puberty to the postclimacteric. If a young girl has her ovaries removed she will be disturbed by glandular-autonomic nervous system imbalance, irregularly, until past the time for the natural menopause to occur. Also if a girl begins to menstruate at the age of 14 years and to the age of 20 her menstruation is of four to five days' duration and the flow is good, and then she begins to flow less or scantily she will develop the climacteric symptoms even though she has cyclic bleeding. She is not in the menopause, but she has ovarian hypofunction from one of the various causes. The menstrual disturbance is only evidence of the glandular imbalance, and the glandular autonomic system imbalance causes the symptoms. Similarly, while the male does not have the visible evidence of gonad hypofunction that the female has, if his gonads hypofunction he develops the same glandular-autonomic imbalance and the characteristic symptoms.

Clinical Notes, Suggestions and New Instruments

BULLOUS DERMATITIS (DERMATITIS MEDICAMENTOSA) FROM PENICILLIN

GEORGE E. MORRIS, M.D.,
AND
JOHN G. DOWNING, M.D.
BOSTON

Reactions from penicillin may be due to the drug itself or they may arise from toxic impurities contained in individual batches of the extract. Those due to impurities were more frequent before technical developments in culture and extraction produced purer products. Such reactions included chills, fever, headache, faintness, flushing of the face, eosinophilia and other pathologic conditions.[1] Urticaria,[2] fever, thrombophlebitis,[3] gastrointestinal reactions,[4] contact dermatitis [5] and vesicular dermatitis [6] have been reported as toxic manifestations to the penicillin itself. To our knowledge, bullous dermatitis (dermatitis medicamentosa) has not been previously reported from the drug.

R. A., a man aged 56, seen at the Brooks Hospital by J. G. Downing on May 25, 1944, had received 1,000,000 units of penicillin for a postoperative infection. Four days after the last injection the patient had noted itching of the left hand and arm, and twenty-four hours later erythema and edema of the left hand, arm and left side of the body appeared.

Bullous dermatitis (dermatitis medicamentosa) due to penicillin.

On the sixth postinjection day there was tense pitting edema of the entire hand and forearm. These parts also showed erythema and multiple ruptured and unruptured bullae, filled with clear, thin, yellow fluid.

The left side of the face and trunk showed multiple wheals of various sizes.

The dermatitis persisted for four to five days and disappeared under bland therapy.

520 Commonwealth Avenue, Boston 15.

From the Department of Dermatology and Syphilology, Tufts College Medical School.

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Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PENICILLIN (See Supplement to New and Nonofficial Remedies, 1944, p 18).

The following dosage forms have been accepted:

CHEPLIN LABORATORIES, INC., SYRACUSE, N. Y.

Penicillin Sodium Salt: 20 cc. vials containing 100,000 Oxford units.

HEYDEN CHEMICAL CO., NEW YORK

Penicillin Sodium: 100,000 Oxford units.

ELI LILLY & CO., INDIANAPOLIS

Penicillin (Sodium Salt): Ampuls of 100,000 Oxford units.

WYETH INCORPORATED, PHILADELPHIA

Penicillin Sodium: Vipules of 100,000 Oxford units.

Penicillin Calcium: Vipules of 100,000 Oxford units.

BENZESTROL—Nonproprietary designation for 2,4-di(*p*-hydroxyphenyl)-3-ethyl hexane, formerly known as Octofollin (see THE JOURNAL, March 4, 1944, p. 647).

The following dosage forms have been accepted:

LEDERLE LABORATORIES, PEARL RIVER, N. Y.

Solution Benzestrol (in Sesame Oil) 5 mg. per cc.: 2 cc. vials. Preserved with 0.5 per cent chlorobutanol.

Tablets Benzestrol: 2 mg. and 5 mg.

DIPHTHERIA TOXOID, TETANUS TOXOID, ALUM PRECIPITATED, COMBINED (See New and Nonofficial Remedies, 1944, p. 563).

The following dosage form has been accepted:

PARKE, DAVIS & CO., DETROIT

Diphtheria Tetanus Toxid (Combined) Alum Precipitated: 1 cc. vial. Preserved with 0.01 per cent merthiolate.

SULFADIAZINE (See New and Nonofficial Remedies, 1944, p. 178).

The following dosage forms have been accepted:

BUFFINGTON'S, INC., WORCESTER, MASS.

Tablets Sulfadiazine: 0.5 Gm.

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Sulfadiazine Tablets: 0.5 Gm.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1944, p. 191).

The following dosage form has been accepted:

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Tablets Sulfathiazole: 0.5 Gm.

SULFAPYRIDINE (See New and Nonofficial Remedies, 1944, p. 188).

The following dosage form has been accepted:

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Tablets Sulfapyridine: 0.5 Gm.

SULFANILAMIDE (See New and Nonofficial Remedies, 1944, p. 184).

The following dosage form has been accepted:

CARROLL DUNHAM SMITH PHARMACAL CO., ORANGE, N. J.

Tablets Sulfanilamide: 0.32 Gm.

SULFAMERAZINE (See Supplement to New and Nonofficial Remedies, 1944, p. 10).

The following dosage form has been accepted:

ELI LILLY & CO., INDIANAPOLIS

Tablets Sulfamerazine: 0.5 Gm.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 24, 1945

SANITARY DANGERS OF CROSS CONNECTIONS IN PLUMBING

Sanitary engineering practice has recognized for many years the hazards attached to the current operation of public water supply systems. The design and construction of an integrated public water supply system guarantee only the essentials of good hydraulic and sanitary practice. After the completion of the system, however, many problems arise because of the nature of the liquid handled and of the physical laws governing its distribution. The system operates under varying conditions of starting and stopping and with thousands of exposures through plumbing installations attached for maximum public, private and industrial uses. These innumerable outlets and interconnections are essential not only for potable water use but for many of the sanitary equipments operated in a water carriage system. No matter how well conceived a water supply system may be, physical relation to nonpotable liquids may result from many of the uses in a modern community. Control of these many collateral uses is one of the most difficult functions of public service. Rarely does a comprehensive system prevent or eliminate the many cross and back siphonage connections which are in existence or which may be continually made.

The Chicago amebic dysentery epidemic in 1933 dramatized the problems attached to the consistent delivery of safe water. This epidemic emphasized the thinness of the dividing line between safety and danger where water supply is exposed to sewage contamination at the points of consumer use. Before and after that nationwide epidemic, sanitary engineers have been confronted with hundreds of epidemics of similar nature. Some indication of the widespread existence of cross connection and back siphonage hazards may be obtained from the accompanying summary of distinct violations of sanitary principles for the protection of water supply lines, as they appear from the records of one large port city. The conditions were found in the 1942-1943 period.

These conditions can be matched in virtually every city in this country. The cross connections are not usually the result of carelessness or poor design but are generally made for stand-by fire protection, for industrial water use, for pump priming or for auxiliary boiler feed.

Reports and recommendations on the subject have been prepared by the American Water Works Association, the New England Water Works Association, the Conference of State Sanitary Engineers and other interested groups. In a comprehensive review [1] of a seven year period ended in 1936 in the United States, Wolman and Gorman state that of 170 reported water borne outbreaks 14 were due to cross connections with a polluted water supply. A preliminary tabulation of disease outbreaks conveyed through water in the United States in 1942, as reported to the U. S. Public Health Service by state and territorial health authorities, indicates that 8 of 50 reported water borne outbreaks were due to cross connections with a polluted water supply.

Violation of Sanitary Principles for Protection of Water Supply

Number of industrial plants and military establishments	319
Cross connections with nonpotable water supplies	331
Process water connections	2,861
Sewer connections (to water supplies)	627
Back siphonage connections with plumbing systems	6,777
Back siphonage connections (miscellaneous)	3,365
Pierhead connections (unequipped with protective devices)	1,115
Total	15,076

Although great progress has been made in eliminating cross connections in the past two or more decades, many thousands of them unquestionably have been broken through cooperative action and through passage and enforcement of cross connection regulations. Some of these regulations have been adopted by many states. Numerous local water and health departments (e. g. Los Angeles) have also adopted rules and regulations. Enforcement often falls far behind the establishment of control procedures. State health agencies usually do not have the personnel to carry out the detailed and continuous follow-up necessary. Local water or health agencies may shirk their responsibilities and fail to carry out the necessary detailed surveys and subsequent reappraisals of conditions. Finally, it must be conceded that, even with conscientious attempted supervision, new cross connections or concealed connections may give trouble.

Back siphonage connections between potable water supply lines and plumbing systems may actually admit sewage to water lines under certain hydraulic conditions. In hospitals, equipment may be used with submerged inlets and connections so installed that infectious or poisonous materials may be back siphoned into the

1. Annual Year Book, A. P. H. A. **20**, No. 2; J. A. W. W. A., February 1939.

potable water supply pipes. Submerged inlets to factory process tanks holding poisonous solutions may result in contamination of the potable water supply, should back siphonage occur. Opportunities for sabotage may exist because of backflow of dangerous solutions in industrial plants.

During the war all of these hazards have unquestionably been increased by the large and rapid expansion in industry and in land and sea transportation. Breakdown in supervision by local, state and federal agencies has been too common. Many of the principles and standards regulating practice in this field were being abrogated in one direction or another during wartime. Such accidents became so frequent both on land and on sea that prompt review of the entire situation was essential in order to eliminate the detectable hazards and to prevent future disabilities. With this objective in mind the Committee on Sanitary Engineering [2] of the Division of Medical Sciences, National Research Council, created a Temporary Subcommittee [3] on Cross Connections to review the rules and regulations promulgated by military, semimilitary and civilian agencies, to recommend modifications in policies and in practice and to make those conclusions and recommendations available to the country at large for application by military and civilian medical officers of health and engineers. This report has now been released by the Committee on Sanitary Engineering, with the approval of the National Research Council and the Surgeons General of the Army, the Navy and the U. S. Public Health Service. Exact figures of the number of persons made sick or exposed to disease outbreak during the last two years are missing in many instances. A review by the committee, however, indicates that at least some 100,000 persons have become ill.

One of the special problems to which the committee directs attention is pierhead connections installed to supply vessels with potable water for drinking or for fire fighting. These provide a ready method of polluting the potable water through the use of auxiliary fire pumps for nonpotable water. In one port city the number of these pierhead connections aggregates 15,000, and protective devices were necessary on some 2,500. The report represents a number of methods of prevention of backflow into potable water systems. All of them are adjusted to the availability of wartime materials and to the increased necessities for physical protection as a necessary supplement to personal supervision. The report should be read by every medical officer of health, every sanitary engineer and every waterworks official engaged in the protection of the potable water supply. Many officials even at this late date are not yet aware of the significance of these concealed hazards.

2. The members of the Sanitary Engineering Committee are Harold E. Babbitt, F. C. Bishopp, V. M. Ehlers, Gordon M. Fair, Kenneth F. Maxcy, H. A. Whittaker and Abel Wolman, chairman.

3. The members of the Temporary Subcommittee on Cross Connections are E. Sherman Chase, Joel I. Connolly, Francis M. Dawson, Raymond F. Goudey, Sol Pincus and Warren J. Scott, chairman.

RETARDATION OF BONE GROWTH

The problem of equalization of the length of the legs arises in children and in young adults as the result of the healing of overriding fractures, injuries to the adjacent epiphysis from joint or bone infection, bone tumors and congenital deformities. In many cases unequal length occurs as a residual effect of paralysis of muscle groups attendant on anterior poliomyelitis. The methods employed for equalization of length consist in lengthening the short limb,[1] shortening the long limb,[2] arresting the bone growth of the longer extremity by destroying the epiphysial cartilaginous plate [3] and stimulating bone growth of the shorter limb by lumbar sympathectomy [4] or by direct irritation of the epiphysial cartilaginous plate.

In a series of experiments on dogs, in which an attempt was made to stimulate bone growth by inserting two different kinds of metal into and around the epiphysial plate, Haas [5] observed that in 1 animal in which a free wire loop was placed around the epiphysial plate in the frontal plane the wire loop opened as growth took place and the epiphysis grew distally. Comparison of the two extremities at the conclusion of the experiment indicated that there was a loss of growth in the limb with the wire loop. Haas repeated the experiment on a number of dogs and became convinced that longitudinal growth of bone could be mechanically hindered by passing a wire loop around the epiphysial plate to bind the epiphysis to the diaphysis. The method was employed in treating 2 patients with discrepancy in the length of the legs resulting from poliomyelitis. A stainless steel wire was passed through the epiphysis and the ends were turned proximally. A similar wire was passed through the metaphysis and the ends were turned distally. The two wires were then hooked together under tension. From March 4, 1941 to July 12, 1944 there had been 1.3 cm. more growth on the short than on the normal side. The operation was performed on 5 patients.

Haas points out that determination of the practicability of this method to control bone growth must await the results obtained after a long period, since growth is relatively slow in man. However, growth of bone can be controlled by alternately releasing or tying the wire loops. The method presents a theoretical advantage over resection of the epiphysial plate because its effect is only temporary.

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ADENOSINE TRIPHOSPHATE

Investigators of intermediary metabolism have shown that the apparently simple combustion of carbohydrate in the body is in reality a complex phenomenon. Much of the newer knowledge has been secured by using thin slices of living tissue as the metabolizing system. Then a still simpler scheme involved the use of purified enzymes, so that the steps of the reactions could be examined in detail. As a result the classic Embden-Meyerhof-Parnas mechanism for the utilization of carbohydrate by tissues was evolved. In comparing the various suggested outlines, it is obvious that phosphate plays an important role in the combustion of glucose; either the esterification of the carbohydrate with phosphoric acid or the hydrolysis of such esters is involved in many of the reactions. Some of these esters possess large amounts of energy which is available in metabolism; such phosphorus linkages have been called the "high energy phosphorus bond" by Lipmann.[1] Adenosine triphosphate possesses a high energy bond which is lost in the course of the phosphorylization of glucose prior to its enzymatic conversion to glycogen or its oxidation for muscular energy and heat. The regeneration of the adenosine triphosphate appears to be associated with the aerobic oxidation of pyruvic acid.

Experimental support for the foregoing view is afforded by the results of studies by Kaplan and Greenberg,[2] who observed that the adenosine triphosphate in the liver is decreased on dietary regimens in which impairment of glucose tolerance might be expected. Thus in rats a high fat ration or inanition produces not only a diabetic type of glucose tolerance curve but also a reduction of adenosine triphosphate in the liver. Injection of glucose, however, increases the hepatic adenosine triphosphate, which is to be expected, as aerobic oxidation of glucose is coupled with the regeneration of energy rich phosphate compounds.

Insulin increases the adenosine triphosphate in the liver even if the animals are consuming a high fat diet, possibly through the aerobic oxidation of pyruvic acid. This augmentation of oxidation of pyruvate may be the fundamental point of action of insulin in carbohydrate metabolism, for it is known that both in vitro synthesis of glycogen and the enzymatic degradation of glucose can occur without the intervention of insulin or other hormones. The foregoing observations on the significance of phosphorus in the metabolism of carbohydrate are of added interest because of the suggested mode of action of insulin. The present clinical significance of this hormone justifies continued investigation of the details of its behavior in metabolism.

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Current Comment

NODULAR PERINEURITIS AND POLYMYOSITIS IN RHEUMATOID ARTHRITIS

Freund and his co-workers[1] in Detroit described distinctive inflammatory nodules in the perineurium of peripheral nerves in rheumatoid arthritis. Such lesions may occur in nerves more or less remote from affected joints as well as in nerves not connected with joints. In a study of the nerves in the amputated legs of a 27 year old woman suffering from rheumatoid arthritis, nodular lesions of a similar nature were found[2] also in large numbers in the skeletal muscles. The lesions varied in size from microscopic to visible by the naked eye on stained sections of muscle. They were made up of lymphocytes, relatively few plasma cells and occasional epithelioid and eosinophilic cells, but giant cells or necrotic centers were not found. In some nodules on nerves there was a central necrosis. Such nodules were found also in biopsies of muscle in 14 cases of rheumatoid arthritis but not in any of many control examinations. The exact relation of the muscle lesions to small blood vessels or to nerves has not been determined. The muscle fibers themselves presented irregularly distributed degenerative and atrophic changes. The Detroit investigators regard these nervous and muscular lesions as specific and as indicative of the systemic nature of rheumatoid arthritis. The joint involvement is associated with a widespread nodular lymphocytic inflammation in peripheral nerves and skeletal muscles, which serves to explain the pain, tenderness and trophic changes of the disease at the same time as it presents a new point for investigative attack on the problems of etiology. Whether the neural and muscular nodules contain the causative agent is a question which invites experimental investigation.

PENICILLIN RESISTANCE

Strains of bacteria resistant to penicillin may be obtained experimentally by growing bacteria on mediums containing increasingly higher concentrations of the drug. Experiments by Demerec[1] indicate that the resistance of a strain of Staphylococcus aureus to certain concentrations of penicillin is not due to an interaction of penicillin on the bacteria but rather that it arises independently in the bacteria by mutation. In any large population of bacteria of the staphylococcus strain used there is some individual resistance to certain low concentrations of penicillin. The nonresistant organisms are eliminated, while the more resistant survive. Penicillin acts as a selective agent but it does not itself increase the resistance of the survivors. Resistance is a complex characteristic of the bacteria which involves a number of mutations and a multiplicity of genic changes.

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MEDICINE AND THE WAR

ARMY

THE ARMY'S RECONDITIONING PROGRAM

Soldiers recovering from battle wounds are making up credits toward obtaining high school and college diplomas while in convalescent hospitals, as part of the Army's reconditioning program. The curriculum offered by the program includes music, printing, automotive mechanics, business and army administration, electricity, photography, carpentry, pattern making, watch repairing, metal working, lettering and sign writing, welding, canvas and leather working and drafting. Patients are not held in army hospitals to complete any course of study. When they have reached the maximum benefit of hospitalization they are returned to duty.

Wounded soldiers, now being evacuated from overseas at the rate of more than 33,000 a month, first are sent to one of sixty-four general hospitals best suited for the special type of treatment required. When a patient has recovered sufficiently and no longer requires daily ward care, he is removed to a convalescent hospital.

A. A. F. RHEUMATIC FEVER CONTROL PROGRAM

The second conference of the A. A. F. Rheumatic Fever Control Program was recently held at the A. A. F. Regional Hospital of the San Antonio Aviation Cadet Center. The conference was attended by more than 150 medical officers representing all branches of the armed forces. Symposiums on rheumatic fever, respiratory disease and air borne infections were presented. The following are the major recommendations of the various committees which met during the conference:

Committee on Sulfonamide Prophylaxis: This measure should be used cautiously and only after other measures to control respiratory disease have been utilized to the full.

Committee on Streptococcus Grouping and Typing: Methods were standardized in all laboratories for this procedure. There are now sixteen special streptococcus laboratories in A. A. F. regional hospitals.

Committee on Treatment of Upper Respiratory Infection: Further well controlled studies with sulfonamides and penicillin are advisable before any therapeutic recommendations can be made.

Committee on Salicylate Therapy: Studies were outlined for the use of salicylates prophylactically and therapeutically. It was recommended that intravenous salicylates are unnecessary, as satisfactory blood levels are obtainable by oral therapy.

Committee on Convalescent Care: Studies of physical fitness and attempts to determine the termination of active rheumatic infection should be continued.

A DISTINGUISHED MEDICAL DETACHMENT

An enviable record has been made by the medical detachment of the 16th Infantry Regiment of the 1st Infantry Division, which has been in action since it landed at Oran, Algeria, Nov. 8, 1942. It has also participated in the Tunisian, Sicilian, Normandy, French, Belgian and German campaigns, participating in the D day landings at Oran, Sicily and Normandy. In the latter landing operation the regiment was awarded the Presidential Distinguished Unit Badge. Officers and men of this medical detachment have to date been awarded 4 Distinguished Service Crosses, 90 Silver Stars, 1 Legion of Merit, 128 Bronze Stars and 159 Purple Hearts. Major Charles E. Tegtmeyer of Hamilton, N. Y., is in command of the unit and is the recipient of each of the five awards mentioned. The men of the unit take pride not only in the excellence of their first aid work but also in their ability to evacuate the seriously wounded expeditiously under fire.

CASUALTIES FROM OVERSEAS

In a recent announcement the War Department stated that army general and convalescent hospitals in this country are caring for more than 50,000 more sick and wounded soldiers than was the case three months ago. The number of patients had jumped from around 87,000 last October to 140,000 by the end of January and is steadily increasing. According to the Office of the Surgeon General each of these men will be sent to an army general hospital where there is a specialized treatment center for his particular type of injury or illness. These "centers" are staffed with specialists in plastic surgery, tropical diseases and other specialized fields. They are also equipped with the finest treatment facilities.

Brig. Gen. Raymond W. Bliss, Assistant Surgeon General, stated that the present expansion of general hospitals by 70,000 beds was being rapidly accomplished through the conversion of existing general hospitals rather than through the construction of new wards. At many of the general hospitals, he said, there are well constructed barracks, built with an eye to the future, which were used to house overseas hospital units during their training period. The barracks are now being turned into wards for patients. Permanent barracks, built to house the hospital staff, are also being converted into wards, and these are being replaced with temporary barracks, which can be quickly constructed.

The number of bed patients who can be cared for in army general hospitals has been further increased by the establishment of more convalescent centers where patients are sent as soon as they are up and about. There are now eleven of these where soldier patients are being reconditioned in a pleasant club-campus atmosphere for return to duty or to civilian life.

This reconditioning program keeps the men active physically and mentally during their convalescence. It has recently been expanded to include vocational guidance and a wider variety of technical, business and art courses which enable the men to develop new interests and skills while they are still patients.

DESIGN NEW DRESS FOR WAC HOSPITAL TECHNICIANS

The Army Quartermaster Corps has developed and is now procuring a new, short sleeved dress of rose beige cotton print resembling chambray for members of the Women's Army Corps who receive special medical and surgical technician training and are assigned as technician aides to army medical officers and nurses. The new dress for Wacs in hospitals, which will replace the present blue cotton crape uniform, is tailored in one piece, fastens down the front with buttons to match its color and has a buttoned belt. The insignia are worn on the collar, the U. S. on the right and the caduceus on the left tab. Each enlisted WAC technician will be issued nine of these easily laundered dresses. They are for wear only while on duty in the hospital and will not be worn by officers.

CHANGE DDT SPECIFICATIONS

The War Department recently announced that specifications of DDT spray, developed by the Quartermaster Corps to control roaches, flies, mosquitoes, bedbugs, ants and other insects, have been changed to eliminate the tendency of the spray to crystallize at low temperatures. The spray, which is a saturated solution of DDT in kerosene, crystallized to some extent when held in unheated storage. By adding 15 per cent of a special methylated naphthalene to the kerosene a solution showing no crystallization at temperatures as low as 20 degrees below zero was obtained.

RECONDITIONING THE MIND SPEEDS SOLDIER CONVALESCENCE

According to Col. Augustus Thorndike, director of the Reconditioning Consultants Division, Office of the Surgeon General, reconditioning the mind, supplementing reconditioning the body, is the newest ally to obtain rapid convalescence. Major W. S. Briscoe, who is in charge of the program, stated that the task of the educational reconditioning program is to return the soldier, either to active army service or to civilian life, mentally alert. Under this program mental activities gradually increase as the soldier's needs for physical reconditioning from his injury taper off. Class 4 patients (confined to bed) have at first merely simple entertaining types of activity that will help them overcome and forget their anxieties about their injury and their future. As they become class 3 patients (up and about but still confined to hospital wards) their mental reconditioning program is stepped up. Men who wish to continue their formal education—stopped by their induction into the Army—are encouraged to take correspondence courses from the United States Armed Forces Institute at Madison, Wis. When the casualty reaches the status of a class 2 patient and no longer needs medical care in a ward, he is given a uniform and becomes a "trainee." He leaves the hospital and is assigned to a reconditioning center, where he lives in army barracks and begins the task of fitting himself for either active or limited duty, according to his disability. Finally, as a class 1 convalescent the soldier patient finds his physical and educational reconditioning increased. He takes drill and other military subjects, and he relearns some of the early lessons of his basic training.

The main idea of the educational reconditioning program is to return the casualty to army duty as quickly as possible, in the best physical condition and mentally as good as or better than before his injury. The same ideal is sought if the soldier is going eventually to return to civilian status.

NEW LIGHTWEIGHT ARTIFICIAL LEG

The War Department stated recently that an improved artificial leg, made of light metals, plastic or fiber, will shortly be made available to amputees of the Army. The new prosthesis is the result of study and recommendations made by the National Research Council, National Bureau of Standards, artificial limb manufacturers, scientists, army and navy surgeons and the Veterans Administration and will be standardized for use by the Army. It provides the best innovations and improvements of the custom built leg now in use, and the important factors studied were interchangeability of parts, light weight, quality and strength of materials.

A cast aluminum knee joint for above the knee legs, consisting of knee block and shin section, and a cast aluminum ankle assembly, consisting of shin and foot sections, have been adopted. Both are to be produced in quantity as soon as the necessary modifications can be made for bonding to metal, plastic or fiber. Joints have been carefully tested by the Bureau of Standards, and specifications provide for the best available metal and finish.

A complete assortment of the various parts that go into an artificial leg will be made available to amputation centers so that each center will be able to continue the policy of making custom built legs in each amputation case.

WOMEN IN ARMY MAY ASK FOR U. S. ASSIGNMENT

In a recent announcement from the War Department it was stated that theater commanders are authorized to return for duty in the United States any woman officer, woman warrant officer or enlisted woman, on her request and presentation of satisfactory evidence that her husband has been returned from permanent overseas assignment with the armed forces to the United States for reassignment, hospitalization or honorable discharge. The new ruling, which applies only to women overseas, is in addition to an older policy with regard to married members of the Women's Army Corps whose husbands have been discharged for medical reasons.

ARMY AWARDS AND COMMENDATIONS

Major Albert B. Smith

The Legion of Merit was recently awarded to Major Albert B. Smith, formerly of Norwich, N. Y. The citation states, in part, "Working with medical units that had never made a landing behind enemy lines, Major Smith trained and organized these units to the extent that on D day, during the landing on Anzio, casualties were treated and evacuated with great speed and dispatch. He directed the establishment of the first permanent cemetery on the beachhead and personally supervised the speedy collection and burial of the dead. When given the duties as post surgeon in Anzio he established contact with all other medical units in the area, both British and American, and planned his medical service so that large numbers of casualties from both land and sea were treated and evacuated in a very efficient manner. Given the responsibility of supervising conditions inside Anzio, he arranged for the immediate elimination of mosquito breeding points, the cleaning of buildings, enforcement of antimalaria measures . . . for the protection of all troops in the city. Major Smith's services were invaluable in maintaining the health and safety of troops stationed in the city of Anzio." Dr. Smith graduated from McGill University Faculty of Medicine, Montreal, in 1938, was commissioned a first lieutenant in September 1939 and was called to active duty in November 1940.

Colonel Francis Brown Berry

The Legion of Merit was recently awarded to Col. Francis Brown Berry, formerly of New York City, "for exceptionally meritorious conduct during the North African campaign." The citation in part stated that "during the operation of the hospital (9th Evacuation) in the Tebessa area in North Africa from Jan. 22 to Feb. 17, 1943, . . . when the enemy broke through at Kasserine Pass and it became necessary to move back the hospital on short notice, Lieutenant Colonel Berry quickly organized and directed a system of detailing parts of the hospital to set up in the rear and admit the 363 patients remaining in the hospital, many of whom were seriously wounded and could not stand the long trip necessitated by existing lines of evacuation. His organizing ability and surgical judgment were reflected directly in the medical record and contributed substantially to the morale and confidence of the combat troops in that area." Dr. Berry graduated from Harvard Medical School, Boston, in 1917 and entered the service May 10, 1942.

Lieutenant Colonel Bert Bradford Jr.

The Bronze Star has been awarded to Lieut. Col. Bert Bradford Jr., formerly of Charleston, W. Va., for meritorious service in Belgium. Dr. Bradford has been attached to an evacuation hospital overseas since the summer of 1943 and has seen service in England, France and Belgium. He graduated from Washington University School of Medicine, St. Louis, in 1935 and entered the service March 28, 1941.

Major Victor E. Nelson

Major Victor E. Nelson, formerly of Detroit, has been awarded the Purple Heart and the Bronze Star with cluster and has two citations for bravery under fire. Dr. Nelson graduated from the University of Michigan Medical School, Ann Arbor, in 1932 and entered the service Nov. 10, 1942.

Lieutenant Colonel Jack F. Burnett

Lieut. Col. Jack F. Burnett, formerly of Ennis, Texas, was recently awarded the Bronze Star for meritorious service as flight surgeon with a unit in China. Dr. Burnett graduated from the University of Oklahoma School of Medicine, Oklahoma City, in 1939 and entered the service Oct. 1, 1940.

Captain F. C. Winskunas

The Bronze medal for bravery and efficiency was recently awarded to Capt. F. C. Winskunas, formerly of Chicago. Dr. Winskunas graduated from Loyola University School of Medicine, Chicago, in 1932 and entered the service Oct. 21, 1942.

NAVY

NAVY AWARDS AND COMMENDATIONS

Rear Admiral William Chambers

Rear Admiral William Chambers, who served as inspector, Medical Department Activities, Pacific Area, from October 1942 to Aug. 1, 1944, was recently awarded the Distinguished Service Medal. He is now medical officer in command, National Naval Medical Center, Bethesda, Md. The citation read "for exceptionally meritorious service to the government of the United States in a duty of great responsibility as inspector, Medical Department Activities, Pacific Area, from October 1942 to Aug. 1, 1944. Working tirelessly and with brilliant administrative skill, Rear Admiral Chambers carried out his vital assignments throughout the combat areas of the South, Southwest and Central Pacific, expeditiously effecting the organization of medical facilities which included first aid treatment in the field, hospitalization and evacuation of the sick and wounded, the establishment of medical storehouses and supply depots for the fleet and shore activities and the preliminary plans for care of natives in conquered territory. A qualified flight surgeon, he personally participated in the evacuation of the first battle casualties from Bougainville prior to the organization of a regular air evacuation service and later, by his unwavering efforts and excellent judgment during our operations in the Marianas Islands, contributed materially to the saving of a large number of lives. Consistently applying his superior professional knowledge efficiently and with outstanding resourcefulness, Rear Admiral Chambers distinguished himself as a forceful leader and was largely responsible for the success of the Medical Department's program in this theater of war." Dr. Chambers graduated from Jefferson Medical College of Philadelphia in 1907 and entered the service April 6, 1908.

Captain George M. Lyon

Capt. George M. Lyon, now on special assignment at the Naval Hospital in Philadelphia, was recently awarded the Bronze Star "for meritorious performance of duty as chemical warfare officer on the staff of commander, United States Naval Forces in Europe, during the period August 1942 to September 1944." Captain Lyon, by his force of character, industry, intense interest and special knowledge in the field of chemical warfare, has been largely responsible for the development—not only in the Medical Department but in all departments—of an appreciation and understanding of the possibilities of chemical warfare. He was chiefly responsible for the training in defense against chemical warfare of the naval forces organized in the United Kingdom for the assault on North Africa and more recently organized the program of instruction for all naval personnel engaged in the operations against the coast of France. As a result of this indoctrination the naval forces involved were prepared to a very high degree to take proper measures if they had been confronted with the use of chemical agents. By his individual effort he has established and maintained liaison with all branches of the services and civilian agencies which were doing investigative work in this field in the United Kingdom and as a result has transmitted much valuable information to the Navy Department. The imaginative professional ability and unselfish devotion to duty displayed by Captain Lyon during this period were in keeping with the best tradition of the United States naval service." Dr. Lyon graduated from Johns Hopkins University School of Medicine, Baltimore, in 1920 and entered the service April 10, 1942. Dr. Lyon is a member representing the American Medical Association on the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association.

Lieutenant Floyd Glenn Warrick

The Legion of Merit was recently awarded to Lieut. Floyd Glenn Warrick, formerly of Glendale, Calif., "for exceptionally meritorious conduct in the performance of outstanding service to the government of the United States as assistant battalion surgeon and later as battalion surgeon prior to and during the operations against enemy Japanese forces on Tarawa Atoll, Gilbert Islands, Nov. 20 to 24, 1943. Exercising sound judgment and superior professional knowledge, Lieutenant (then Lieutenant, Junior Grade) Warrick expeditiously trained the personnel and prepared the plans of the medical section for the attack on this highly strategic island. When his battalion surgeon was killed during the ensuing action he promptly established an aid station in the cove area of the North Beach of Betio Island and, working tirelessly and with expert skill for three days and nights under extremely hazardous conditions, efficiently supervised the treatment of numerous casualties and all medical activities in the area. By his cool courage and tenacious devotion to duty in the face of grave peril, Lieutenant Warrick was responsible for the saving of many wounded marines who otherwise might have perished." Dr. Warrick graduated from the University of Nebraska College of Medicine, Omaha, in 1938 and entered the service Dec. 21, 1942.

Lieutenant (Junior Grade) Ralph C. Pollock Jr.

The Navy and Marine Corps Medal was recently awarded to Lieut. (jg) Ralph G. Pollock Jr., formerly of St. Louis. The citation read "for heroism while serving as medical officer of a Marine infantry battalion in action against the enemy on the island of Saipan, Marianas Group, on June 15, 1944. While the battalion was under heavy mortar fire and numerous casualties were suffered, Lieutenant Pollock, at great risk to his life and with utter disregard for his own safety, moved from one to another and treated at least fifteen wounded Marines. Despite the heavy mortar fire, Lieutenant Pollock administered this aid without the assistance of a corpsman and relieved the suffering and saved the lives of many Marines. His actions during a crucial phase of the attack were an inspiration to all and did much to bring order out of the confusion of a hotly contested beachhead and were in keeping with the highest traditions of the United States Naval Service." Dr. Pollock graduated from Stanford University School of Medicine, San Francisco, in 1941 and entered the service Sept. 7, 1943.

Commander Martin Van Brown

Under Secretary of the Navy Ralph A. Bard recently presented the Bronze Star to Comdr. Martin Van Brown, formerly of Carbondale, Ill., and now on duty as executive officer of the Hospital Corps School for members of the Women's Reserve, at the Naval Medical Center, Bethesda, Md. The citation accompanying the award read "for heroic achievement as medical officer attached to a warship during the assault and capture of an enemy Japanese held island in the Pacific war area on July 24, 1944. Cool and courageous under hostile fire, Commander Brown rendered gallant service throughout this hazardous operation and, although painfully wounded, continued at his post of duty for twelve hours, administering medical care to casualties aboard. His outstanding professional skill and inspiring conduct were in keeping with the highest traditions of the United States naval service." Dr. Brown graduated from the University of Illinois College of Medicine, Chicago, in 1931 and entered the service June 18, 1930.

Captain Vincent Hernandez

The Bronze Star was recently presented to Capt. Vincent Hernandez of Washington, D. C., the citation accompanying the award reading "for meritorious achievement as force medical officer on the staff of Commander Air Force, United States Atlantic Fleet, from June 1943 until January 1945. Skilfully coordinating the work of medical officers of the Air Force, Atlantic Fleet, with that of naval air stations basing fleet aviation units, Captain Hernandez organized and supervised the activities of the officers under his jurisdiction and, by his untiring efforts and painstaking attention to particular needs, effected measures to insure the physical fitness, endurance and resistance of flying and maintenance personnel engaged in the widespread battle of the Atlantic. His exceptional success in this vital service reflects the highest credit on Captain Hernandez and the United States Naval Service." Dr. Hernandez graduated from Georgetown University School of Medicine, Washington, in 1918 and entered the service Sept. 10, 1921.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

The following data are to be noted in extension of the revised selective service deferment policy as published in THE JOURNAL, March 10:

1. Students are not included in these procedures.

2. Members of medical faculties who hold degrees other than that of doctor of medicine, such as Ph.D., do not come under the jurisdiction of the Procurement and Assignment Service.

3. This work should be completed by April 1 if protection is to be assured to those it is necessary to protect.

4. In filling out forms 42-A for the group 30 through 37, it is necessary only to forward one copy rather than three copies to the registrant's local board.

5. These forms do not have a place for certification but in the case of the Procurement and Assignment Service, as differentiated from all other certifying agencies, similar endorsement should be inserted in spite of advices to the contrary which are based on the standard procedure for all other certifying agencies.

6. All men holding the degree of doctor of medicine in the groups affected require certification by the Procurement and Assignment Service, as well as all interns who do not receive their M.D. degree until completion of their internships.

7. It would be of considerable help to the Procurement and Assignment Service if the institutions would forward military record, if any, of the individual, such as "Applied for commission, physically disqualified on (date)." This could be attached as a notation to the forms.

8. State chairmen are being supplied with copies of form DSS-333, but it is not absolutely essential that such lists be filled out on standard forms. Lists on plain pieces of paper with the proper headings will serve satisfactorily and will not delay getting the information forwarded to the state chairman. Keep in touch with your state chairman in regard to further details and further directions from his office rather than from other sources.

MISCELLANEOUS

JOURNAL AND WAR MEDICINE NEEDED FOR FOREIGN LIBRARIES

Physicians wishing to donate back copies of THE JOURNAL (and/or *War Medicine*), issues from 1939 on, to help restock medical libraries of liberated countries in Europe may do so by sending this material to the Foreign Information Research Division, Office of War Information, 224 West 57th Street, New York 19, N. Y.

The Office of War Information, working in collaboration with our legations and embassies overseas, is discovering the urgent need of the medical profession abroad in terms of information that has been developed during the war period. Representatives in OWI outposts will make a distribution of donations.

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

New York

Induction Center, Grand Central Palace, New York: Report on Anesthesia Practices in the Present War, Dr. E. A. Rovenstine, April 6; Common Wartime Dermatoses, Dr. Frank C. Combes, April 13 (to be repeated on April 20); Common Allergic Manifestations, Dr. Joseph Harkavy, April 27.

Ohio

Crile General Hospital, Cleveland: Congenital Anomalies of the Genitourinary Tract, Dr. William E. Lower, April 24.

Pennsylvania

U. S. Naval Hospital, Philadelphia: Surgical Conditions Affecting the Knee Joint, Dr. Paul Colonna, April 6.

Virginia

Woodrow Wilson General Hospital, Staunton, Va.: Arteriovenous Fistula, Dr. William B. Porter, April 11.

A. A. F. Regional Hospital, Langley Field, Virginia: Psychosomatic Medicine, Dr. Solomon Katzenelbogen, April 27; Radiology, Dr. Frederick M. Hodges, April 27.

West Virginia

Newton D. Baker General Hospital, Martinsburg, W. Va.: Management of Plastic Surgery Problems in War, Dr. Edward A. Kitlowski, April 2; Clinic in General Surgery, Dr. William F. Rienhoff Jr., April 2; Psychosomatic Medicine, Dr. Claude L. Neale, April 16; Recent Developments in Nutrition, Dr. J. C. Forbes, April 16.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, March 10, page 598)

COLORADO

Corwin Hospital, Pueblo. Capacity, 228; admissions, 4,628. Dr. Samuel B. Potter, Chief Surgeon (interns, July 1).

ILLINOIS

Englewood Hospital, Chicago. Capacity, 187; admissions, 5,693. Mr. A. R. Zeiter, Superintendent (5 interns, October 1).

St. Mary's Hospital, East St. Louis. Capacity, 276; admissions, 5,366. Sister M. Prosperia, R.N., Superintendent (interns).

KENTUCKY

Louisville General Hospital, Louisville. Capacity, 587; admissions, 9,971. Dr. John Walker Moore, Medical Director (residents—medicine, surgery, gynecology and obstetrics, pediatrics, disqualified for medical service).

MARYLAND

Maryland General Hospital, Baltimore. Capacity, 268; admissions, 4,977. Mr. Stewart B. Crawford, Superintendent (interns, July 1).

St. Agnes Hospital, Baltimore. Capacity, 277; admissions, 5,788. Sister Rosanna, R.N., Administrator (resident—surgery, July 1, disqualified for military service).

Sinai Hospital, Baltimore. Capacity, 347; admissions, 6,083. Mr. Harvey H. Wriss, Executive Director (resident—obstetrics, July 1, disqualified for military service).

NEBRASKA

Bishop Clarkson Memorial Hospital, Omaha. Capacity, 160; admissions, 4,662. Miss Cecelia Meister, R.N., Superintendent (intern).

NEW JERSEY

Muhlenberg Hospital, Plainfield. Capacity, 330; admissions, 6,319. Mr. John R. Howard Jr., Superintendent (4 interns, July 1).

NEW YORK

Cumberland Hospital, Brooklyn. Capacity, 400; admissions, 5,790. Dr. Max Seide, Medical Superintendent (3 interns, July 1).

Gouverneur Hospital, New York City. Capacity, 220; admissions, 3,221. Dr. O. I. Bloom, Medical Superintendent (3 interns, July 1).

Mother Cabrini Memorial Hospital, New York City. Capacity, 205; admissions, 3,212. Mother Corinna, R.N., Superintendent (interns).

OHIO

City Hospital, Akron. Capacity, 421; admissions, 10,909. Mr. Worth L. Howard, Administrator (2 residents—surgery, July 1, disqualified for military service).

Deaconess Hospital, Cincinnati. Capacity, 198; admissions, 4,399. Mr. William H. Frersing, Superintendent (4 interns, July and August).

PENNSYLVANIA

St. Joseph's Hospital, Pittsburgh. Capacity, 200; admissions, 4,507. Sister Anna Regina, Superintendent (interns, April 1, 1046).

TEXAS

Methodist Hospital, Dallas. Capacity, 225; admissions, 8,193. Dr. C. W. Sensenbach, Medical Director (interns).

St. Paul's Hospital, Dallas. Capacity, 300; admissions, 12,444. Sister M. Antonio, R.N., Superintendent (interns).

ORGANIZATION SECTION

Official Notes

ABSTRACT OF MINUTES OF MEETINGS OF BOARD OF TRUSTEES HELD FEBRUARY 15 AND 16, 1945

A two day meeting of the Board was held in the headquarters of the Association on Thursday and Friday, February 15 and 16, preceded by a full day meeting of the Executive and Finance Committee, during which careful consideration was given to the business of the Association.

INVESTMENTS

The first order of business was a review of the investment portfolio of the Association, and action was taken with respect to the purchase and sale of securities.

TEMPORARY SECRETARY FOR COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

The Board authorized the employment on a part-time basis of Mr. Thomas A. Hendricks, executive secretary of the Indiana State Medical Association, to act as temporary secretary of the Council on Medical Service and Public Relations.

APPROPRIATIONS

Appropriations were made for the conduct of the various councils, bureaus, committees and departments of the Association, for exhibits, for the usual conferences and for scientific and therapeutic research.

BOARD OF TRUSTEES NEWS LETTER

The Board authorized the preparation in the headquarters office about twice a month of a news letter for circulation under the name of the Board of Trustees, with the approval of the Secretary of the Board and the Secretary and General Manager of the Association, to members of the House of Delegates, officers of the Association, officers of state medical societies and councils.

CANCELLATION OF ANNUAL SESSION OF ASSOCIATION

The Board confirmed its mail vote, which was unanimously in favor of canceling the annual session of the Association in 1945, and authorized the Secretary and General Manager to make application for a meeting of the House of Delegates to be held this year.

ELECTION OF DR. ROBERT A. PEERS TO BOARD OF TRUSTEES

The Board also confirmed its mail vote, which was unanimously in favor of the election of Dr. Robert A. Peers of Colfax, Calif., to serve as Trustee in the place of Dr. Edward M. Pallette (deceased) until the next meeting of the House of Delegates.

LEGISLATION

The Board approved the appointment of Dr. R. L. Sensenich and Dr. Victor Johnson to confer with representatives of the American Hospital Association with respect to the Hill-Burton Hospital Construction Bill when and if such a meeting is deemed necessary and to appear before the Senate Committee on Education and Labor when hearings on that bill are held.

The Board also approved the appointment of Dr. Walter Donaldson and Dr. Morris Fishbein to confer with two representatives each of the American Hospital Association and the Editors and Publishers Association for the purpose of developing a press code for hospitals.

REQUEST FOR SECTION ON PHYSICAL MEDICINE

The opinion of the Council on Scientific Assembly, to which a request from the Baruch Committee on Physical Medicine was referred, to the effect that this request for a section on physical medicine should be referred to the House of Delegates, was approved by the Board.

MOVEMENT TO MINIMIZE TRAFFIC ACCIDENTS AND TO CONSERVE MANPOWER AND TRANSPORTATION FACILITIES

The Board expressed its willingness to cooperate to the fullest extent with the International Association of Chiefs of Police in its effort to decrease traffic accidents and to conserve manpower and transportation facilities, and instructed the Editor of THE JOURNAL to make editorial comment on this subject.

INCREASE IN RESERVE FUND

The reserve fund for machinery and equipment was increased, in view of the fact that it has been impossible to make necessary purchases along these lines since the beginning of the war and that present machinery and equipment is steadily wearing out or becoming antiquated.

APPOINTMENTS

The following appointments were made to editorial boards of special journals and to councils and committees (unless otherwise stated, the appointee succeeds himself):

American Journal of Diseases of Children, Dr. James L. Wilson; *Archives of Dermatology and Syphilology*, Dr. Paul A. O'Leary, Rochester, Minn., to succeed Dr. Charles C. Dennie; *Archives of Internal Medicine*, Dr. John H. Musser; *Archives of Neurology and Psychiatry*, Drs. Charles D. Aring and Louis Casamajor; *Archives of Ophthalmology*, Dr. W. L. Benedict; *Archives of Otolaryngology*, Dr. Chevalier Jackson; *Archives of Pathology*, Dr. Wiley Davis Forbus, Durham, N. C., to succeed Dr. Oscar T. Schultz, who resigned because of illness; *Archives of Surgery*, Drs. Waltman Walters and Walter E. Dandy; Council on Pharmacy and Chemistry, Drs. Morris Fishbein, Perrin H. Long, G. W. McCoy and Elmer M. Nelson; Council on Physical Medicine, Drs. A. U. Desjardins, Frank H. Krusen and H. B. Williams; Council on Foods and Nutrition, Dr. Morris Fishbein and Dr. A. Ashley Weech, Cincinnati, to succeed Dr. Irvine McQuarrie (resigned); Council on Industrial Health, Drs. Leroy U. Gardner, A. J. Lanza and C. D. Selby; Committee on Scientific Research, Dr. Martin H. Fisher; Committee for the Protection of Medical Research, Dr. William J. Kerr and Father A. M. Schwitalla, and Committee on Postwar Medical Service, Mr. Barry Smith, director of the Commonwealth Fund, to succeed Dr. Alan Gregg (resigned).

Dr. William Weston, Columbia, S. C., and Dr. Edgar P. Copeland, Washington, D. C., were appointed to serve as conference members of the Committee on Cooperation with Government and Medical Agencies of the American Pediatric Society, for the purpose of taking up any child health emergency situations that may arise.

HANDLING OF POSTWAR MEDICAL SUPPLIES

The Secretary and General Manager was authorized to notify the United States Public Health Service that the recommendations of the Committee on Drugs and Medical Supplies of the Division of Medical Sciences of the National Research Council, as reported to the Committee on Postwar Medical Service, are concurred in by the Board and represent its principle in the handling of postwar medical supplies.

MISCELLANEOUS

Many other matters, too numerous to mention in the limited space available for this abstract, were considered by the Board. Some of these will be reported on in the future.

N. B. C. NETWORK BROADCASTS OF DOCTORS LOOK AHEAD

Doctors Look Ahead in the next four weeks to four vital topics affecting the health of the nation in the critical months of war and peace approaching:

March 24. Juvenile Deliquency, a topic which is on every tongue and for which innumerable solutions are proposed. Doctors Look Ahead will stress the responsibility of parents for the so-called delinquency of youth.

March 31. Accidents, which have taken an increased toll of American lives on the highway and in industry but even more so in the home. Doctors Look Ahead will stress prevention of accidents and emergency care of the injured.

April 7. Tuberculosis, which was numbered a few years ago among declining diseases but which has now begun again to show its usual wartime trend, namely upward. Doctors Look Ahead will point out the causes and suggest countermeasures.

April 14. Cancer, to which the nation's attention is officially directed in presenting by proclamation of the President pursuant to act of Congress. Doctors Look Ahead will stress new opportunities for cancer victims of the future.

Doctors Look Ahead is heard on one hundred and twenty-three stations of the National Broadcasting Company network each Saturday at 4 p. m. Eastern War Time, (3 p. m. Central War Time, 2 p. m. Mountain War Time and 1 p. m. Pacific War Time). Some stations may record the program and broadcast it at a time which suits their schedule better. Local newspaper radio announcements should be consulted.

Washington Letter

(From a Special Correspondent)

March 19, 1945.

Military Affairs Committee Studies Nurse Draft

Hearings on the proposed nurse draft opened this morning in the Senate Military Affairs Committee room in the Capitol with Senator Elbert D. Thomas, Democrat of Utah, presiding. The Senate group had decided to hold public hearings on the House approved nurse draft bill following decisions in both chambers on manpower legislation. Conferences also opened today between the House and the Senate to reconcile the conflicting manpower bills passed by each body.

The House bill would draft unmarried nurses, male and female, for commissions in the armed forces, affecting nurses over 19 and under 45. It passed the House March 7. Senator Thomas said that in view of amendments made by the House to the May nurse bill, and changes in regulations made by the Army and Navy, prospects of agreement with the House appeared very favorable. Among changes in army and navy requirements which give the bill more favorable Senate chances are those lifting the Navy's ban against marriages in the Navy Nurse Corps and the lowering of the Army's physical requirements. Senator Thomas said that amendments putting male nurses on the same basis as female nurses and the ban on interference with the education of nurses would also win Senate support.

The National Nursing Council urges an immediate inventory of all nurses up to 65, married and single, as a first step either to drafting or to recruiting voluntary enlistments of nurses. The council, clearing house for the sixteen major nurses' organizations, revealed that although 60 per cent of the more than 220,000 active nurses not on military duty are eligible for Army and Navy service, voluntary response has dwindled to about 800 a week.

Administration Starts Its Own Probe of Veterans' Hospitals

The administration moved quickly to conduct its own investigation of magazine charges that veterans are receiving improper treatment in government hospitals. Representative Rankin, Democrat of Mississippi, announced that the House World War Veterans Committee, of which he is chairman, will investigate, following the announcement by Veterans Administrator Frank T. Hines that he had ordered a sweeping probe into all veteran hospital facilities throughout the country. The charges had wide repercussions. Newspapers recommended that the Veterans Administration hospitals and doctors be freed "from the blighting hand of lay domination that now grips it." Brigadier General Hines was described as "the last man in the world who should be controlling this program . . . he displayes an unconscious antipathy toward good medicine." Replacement of the present medical director of the Veterans Administration hospital program, Dr. Charles M. Griffith, "by an outstanding medical man not lacking in spine, vision and energy," also was urged. It was proposed that such a man should be aided by an advisory group of medical experts and "given freedom to shake up the whole program and to provide the best available medicine for our sick and disabled vets." Mrs. Roosevelt entered the controversy by blaming the people of the nation for "neglecting to know" what is going on in veterans hospitals. "As citizens we should visit the hospitals and pay attention to what we see," she said.

Sparkman Urges Program for Physically Handicapped

The need for a national program of rehabilitation for the physically handicapped was likened by Representative John J. Sparkman of Alabama to the national need for a program of rehabilitating physical resources, forests, soil and water, which brought the Tennessee Valley Authority to his district. Addressing the Washington Lodge of the American Federation of the Physically Handicapped, in the National Press Club lounge, he said "Only ignorance of the situation has caused us to lag so badly in rehabilitation of human beings." Under present rehabilitation laws an average of 8,500 persons a year have been rehabilitated and "made self respecting, productive taxpayers," he said. However, "casualties on the home front have been 800,000 a year." He expressed confidence that the House will continue a study of the problem begun last session by a subcommittee under Representative Augustine B. Kelley of Pennsylvania. Capt. Howard H. Montgomery, Navy officer in charge of rehabilitation, outlined the Navy's program to return disabled men to usefulness, and Earle M. Sawyer, Civil Service Commission consultant, told of placement of handicapped in federal service.

Druggists Advise Caution in Use of Penicillin

Although 130 billion units of penicillin, or about 6,500,000 doses, are being rushed to the nation's drug stores, hospitals and drug supply houses for civilian use starting March 15, purchasers have been warned by druggists to exercise care in its use. "The penicillin we have available is for injection under conditions that virtually call for hospitalization," said a spokesman for the Washington Druggists Association. "It requires injections at three hour intervals over a protracted period and under constant observation. Because of this we believe enough has been made available to meet present requirements." The drug supply section of the War Production Board said that though a physician's prescription is not mandatory for sale of the drug, because of the form in which it has been made available, almost no druggist will sell it except at a doctor's request. The present release must last until April 1, but the WPB has guaranteed a minimum of 1,000,000 additional vials for April, and it expects the amounts to continue to increase.

Congress Honors Chinese Doctor Who Saved Fliers

Dr. Shen-Yen-Chen, Chinese doctor who gave medical care to Lieutenant Ted Lawson and four companions forced down over Free China after a raid on Tokyo, was introduced to Congress by Representative Jennings Randolph. He refused payment from the fliers, but in appreciation the United States is giving him a two year surgery course at Harvard Medical School. The feat is portrayed in the current movie "Thirty Seconds Over Tokyo."

Capital Notes

Ten medical officers of the Veterans Administration will attend an eight week course in tropical diseases conducted by the Army Medical School at Walter Reed Hospital Army Medical Center.

Governor Herbert O'Conor of Maryland announced extensive postwar hospital building plans for the state when he opened a drive to raise $700,000 for a general hospital in Silver Spring, which adjoins the Capital.

The National Capital Parks and Planning Commission has approved plans for construction of two new hospitals in the District, Georgetown University and George Washington University to be the sponsors. They will each house 400 patients.

Electrical creation of speech was demonstrated to the National Geographic Society in Constitution Hall by Dr. J. Owen Perrine, with a machine, Voder, operated from a console like an old fashioned organ, to talk, recite poetry, converse with an audience, laugh and sing.

War has developed diversified uses for x-ray equipment in both medical and industrial fields, WPB reports, stressing the importance of this equipment in treating battle casualties.

Penicillin in the treatment of infections was discussed by the Smith-Reed Russell Society in George Washington University School of Medicine auditorium, with Dr. Chester F. Keefer, professor of medicine at Boston University, leading the discussions.

At the District of Columbia Medical Society this week Dr. Wilfred Overholser, superintendent of St. Elizabeths Hospital, was to speak on mental hygiene, and the Syphilis Journal Club was to hear talks by Drs. John R. Heller and C. James Van Slyke of the U. S. Public Health Service and Drs. Richard C. Arnold and John F. Mahoney, Staten Island, N. Y.

The Red Cross discloses that it is getting back in the form of a powerful measles preventive some of the blood it gave the armed forces, the preventive being immune serum globulin.

The oldest WAC hospital unit in the Army has received a plaque for its good work at Walter Reed General Hospital from Major Gen. Shelley U. Marietta, U. S. Army, commanding general of the Army Medical Center.

Inability of volunteer workers to lift a dying man into an ambulance has launched an inquiry here which may result in the practice, abandoned because of war shortages, of having physicians ride ambulances on emergency calls.

Disabled job applicants, including blind, deaf, armless and legless men and women, are being assisted into jobs with government or private industry through a new "job clinic" set up here.

Vice Admiral Ross McIntire, Surgeon General of the Navy, in an appeal for the Red Cross, said that the organization "cannot falter, because tougher fighting and higher casualties than bloody Iwo Jima lie ahead."

Medical Legislation

STATE LEGISLATION

Delaware

Bill Introduced.—H. 327 proposes in effect to permit any person licensed to practice the healing art in Delaware to render the medical care called for by the workmen's compensation act.

Illinois

Bill Introduced.—S. 167 proposes to condition the issuance of a license to marry on the presentation of a physician's certificate that he has examined the prospective marital partners to determine whether or not they have conflicting blood types and that the determination of such examination has been communicated to the parties.

Maryland

Bills Introduced.—S. 517, to amend the medical practice act, proposes to authorize the issuance without examination of a license to practice medicine and surgery to resident citizens of Maryland over 30 years of age who have graduated from a class A medical school, have had at least one year of internship in a recognized hospital and have had at least three years of active service as a medical officer in the armed forces, in the Public Health Service or in the Veterans Administration. H. 321 proposes to authorize the state board of health or a local health officer, when it or he has reasonable cause to believe that any person is infected with a venereal disease and is likely to be a source of infection, to cause a medical examination to be made of the person and, if the person is found to be infected with a venereal disease, to require such person to submit to treatment therefor.

Michigan

Bill Introduced.—H. 257 proposes to authorize the governor to appoint a board of industrial medical examiners to examine and license applicants to practice as industrial medical assistants. Such licentiates, however, are prohibited from practicing medicine or from undertaking the treatment or cure of disease.

Minnesota

Bills Introduced.—H. 632 proposes to require all hospitals supported in whole or in part by public funds and which are equipped with appropriate x-ray units, when requested by a licensed practitioner of any form of the healing art, to make x-ray examinations of the human chest for the purpose of diagnosing pulmonary tuberculosis. H. 786 proposes to create a sickness benefit fund from contributions by employees for the payment of benefits to employees who are sick and unable to work.

Missouri

Bill Introduced.—H. 206 proposes to prohibit any licensed physician, dentist, optometrist, osteopath, chiropractor, chiropodist or veterinarian from utilizing the prefix "Doctor" or "Dr." in connection with his name in a professional use without affixing thereto suitable words or letters designating the degree possessed or the particular type of practice in which he is engaged.

Nevada

Bills Introduced.—S. 125 proposes to require a public hospital to admit venereal disease cases at the expense of the county involved when, in the opinion of the state department of health, the appropriate local health officer or the director of venereal disease control, the persons infected with venereal disease may be a menace to public health. A. 156, to amend the laws relating to the practice of osteopathy, proposes, among other things, to eliminate those provisions limiting the scope of the practice permitted to osteopaths to manipulation and denying osteopaths the right to practice obstetrics, to administer or prescribe drugs or to perform surgical operations. Possibly the intended effect of this bill is to permit osteopaths to practice medicine and surgery without restriction. A. 165 proposes to authorize the establishment and operation of the Nevada Tuberculosis Sanatorium. A. 172 proposes to authorize the payment of cash sickness insurance to persons unable to work because of sickness. A. 175 proposes to enact a venereal disease control act. Among other things, the bill proposes to require any person who makes a diagnosis or treats a case of venereal disease and the superintendent of a hospital or dispensary or other institution in which there is a case of venereal disease to report the facts immediately to the county health officer. The bill proposes to provide for compulsory detention and treatment under stated conditions. Any person other than a licensed physician who undertakes to treat or prescribe for a venereal disease, or any druggist who refills, without the instructions of the prescribing physician, is to be guilty of a misdemeanor and subject to fine. All residents of the state between 14 and 65 are to be required to "have their blood examined for syphilis by an approved laboratory test" and any person failing to do so is to be guilty of a misdemeanor.

New Mexico

Bill Introduced.—H. 275 proposes what in effect is a system of compulsory health insurance.

North Carolina

Bills Introduced.—S. 293 and H. 594 propose to provide a statewide program of hospital and medical care and to create the North Carolina Medical Care Commission, which is to be authorized on behalf of the state to contribute one dollar a day for each indigent patient hospitalized in any approved hospital and to survey the state to determine the hospital needs of the state and to make loans to medical students. The University of North Carolina is to be authorized to expand its two year

medical school into a standard four year medical school and to construct and equip a hospital at the university of at least 400 beds to provide hospital facilities for the people of the state. H. 554 proposes to establish a state cancer commission to establish and operate cancer clinics in the state. H. 786 proposes to require the state board of health to administer a program for the prevention and cure of cancer. With respect to indigent cancer patients, the board is to provide financial aid for diagnosis and treatment in any approved hospital in the state.

Ohio

Bills Introduced.—H. 284 proposes to enact a separate chiropractic practice act and to create an independent board of chiropractic examiners to examine and license applicants for licenses to practice chiropractic. H. 224, to supplement the medical practice act, proposes in effect to require the board of medical examiners to issue without examination a license to practice naturopathy to any resident who at the time of the passage of this bill is licensed to practice naturopathy in any other state. The bill further proposes to require the board to examine any person who holds a degree of Doctor of Naturopathy and who applies for a license.

Oklahoma

Bill Introduced.—H. 367 proposes to require every physician attending a pregnant woman to take or cause to be taken a sample of her blood at the time of the first examination and to submit that sample to an approved laboratory for a standard serologic test for syphilis.

Pennsylvania

Bills Introduced.—S. 398 proposes to appropriate $2,000,000 to the Department of Health to establish rheumatic fever clinics throughout the state. S. 355 proposes to authorize the State Department of Health to require all persons reasonably suspected of being infected with venereal disease to submit to medical examination and blood test or other approved diagnostic procedure for the purpose of ascertaining the presence of venereal disease. The board is to be given power to require such person to submit to the diagnostic procedures indicated and if found infected to submit to appropriate treatment. The bill further proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate that the party has submitted to an examination and serologic test to determine the existence or nonexistence of syphilis and that in the physician's opinion the party is not infected with that disease or if so infected is not in a stage of the disease which is likely to become communicable. Likewise the bill proposes to require every physician attending a pregnant woman to take or cause to be taken, unless the woman dissents, a sample of her blood and to submit such sample to an approved laboratory for an approved serologic test for syphilis. H. 667 proposes that all residents under 12 years or residents over 65 be given a complete medical examination by examiners appointed by the secretary of health medical examiners. If the need for medical care is indicated from such examinations and if care cannot be provided because of financial conditions it is to be the duty of the state to provide necessary care. H. 880 proposes to authorize an incorporated nonprofit hospital to condemn such land as it desires for any purpose consonant with its charter or articles of incorporation.

Rhode Island

Bill Introduced.—H. 733 proposes to enact a naturopathic practice act.

South Carolina

Bill Introduced.—S. 60 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate, based on physical examination and on approved laboratory procedures, that the party either is not infected with syphilis or if so infected is not in a stage of that disease which may become communicable to the marital partner.

Texas

Bills Introduced.—H. J. Res. 59 proposes to submit to the electors of the state a proposition that in effect would do away with the present constitutional provision in Texas prohibiting the legislature from showing any discrimination between schools of medicine. The net effect of the proposed constitutional amendment would be to permit the legislature to enact separate cult practice acts with lower educational requirements than those now present in the medical practice act. H. 720 proposes so to amend the medical practice act as to make its provisions inapplicable "to chiropractors, duly licensed under the laws of this state, who confine their practice strictly to chiropractic as defined by statute."

Vermont

Bills Introduced.—H. 225 proposes so to amend the narcotic drug act as to expand the term "narcotic drugs" specifically to include isonipecaine. H. 222 proposes to authorize the State Department of Health to accept funds made available by federal law to the several states for assistance in the promotion of health and prevention of disease. S. 52 proposes to provide for a Vermont blood plasma bank to be governed by a board of control appointed by the governor. One member of the board is to be from the State Board of Health, one from the faculty of the medical college of the state university, one from the Vermont Hospital Association, one from the state medical society and one from the State Department of the American Legion.

Wisconsin

Bill Introduced.—A. 372, to amend the medical practice act, proposes to authorize the suspension, as well as the revocation, of a license to practice medicine for the causes stated in the present law.

Council on Medical Service and Public Relations

INSURANCE PLAN LEGISLATION

The Council has been informed by the Bureau of Legal Medicine and Legislation on the basis of advice from its legislative reporting service that so far in 1945 laws authorizing organization and operation of nonprofit medical service plan corporations have been enacted in Tennessee, Iowa and North Dakota. Similar bills are in process of enactment in Kansas, Minnesota and South Dakota. In addition, a law permitting a nonprofit hospital service corporation to operate a supplementary medical service plan in conjunction with a hospital service plan has been enacted in West Virginia. No other similar bills are pending today, according to available information.

IOWA PASSES MEDICAL SERVICE PLAN LEGISLATION

A bill to authorize the operation of nonprofit service plans in Iowa was approved by the governor on February 15. It is understood that the Iowa Medical Service, sponsored by the Iowa State Medical Society, has qualified under the law and expects to offer to the public a medical plan which in some aspects is broader than any plan now operating under medical society auspices. Subscribers to the proposed plan of Iowa Medical Service will be insured against the costs of surgical and obstetric services in or out of the hospital and medical care for hospitalized illnesses after the first three day period in the hospital. X-ray examinations will be covered not to exceed $15 for each service and with $10 allowed for anesthesia. The basic cost is to be $1 for individuals and $3.25 for the family contract. Mr. Edwin M. Kingery, the executive secretary of the Polk County Medical Society, is to act as executive director of the Iowa Medical Service plan and is to serve half time with the Polk County Society and half time with Iowa Medical Service.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Professorship in Obstetrics Named for Lyle McNeile.—A chair in obstetrics has been created at the University of Southern California School of Medicine, Los Angeles, in honor of the late Dr. Lyle G. McNeile, who organized the department of obstetrics and gynecology. He was a member of the first faculty of the school of medicine when it became affiliated with the University of Southern California in 1909. In 1931 he organized the department of obstetrics and gynecology, serving as instructor until 1939. He was emeritus professor at the time of his death in Los Angeles March 1.

CONNECTICUT

Alcohol Study.—The section of alcohol studies of the Laboratory of Applied Physiology, Yale University, plans to hold its third annual session July 10-August 3. The summer session was established in 1943 as the first formal school of its kind in the nation to make the results of scientific research available for application to the problems of alcohol in the community (THE JOURNAL, June 12, 1943 p. 454). This year's program will include daily seminars and lectures, and enrollment will be limited to 150 students. Application for admission to the session must be made by April 1.

Conference Talks at Institute of Living.—On February 7 the Institute of Living opened a ten week series of conference talks on neurology, psychiatry and allied sciences. Dr. Harry C. Solomon, clinical professor of psychiatry, Harvard Medical School, Boston, gave the first lecture, on psychiatry. Those who have given lectures and those who will speak include:

Dr. Nolan D. C. Lewis, New York, Shock Therapy—Evidence For and Against Damage, February 14.
Dr. Abraham Myerson, Boston, Constitution and Heredity, February 21.
Dr. Sandor Lorand, New York, Hypnotism as a Method of Therapy, February 28.
Robert H. Felix, assistant surgeon general, U. S. Public Health Service, U. S. Public Health Service Attacks Mental Illness, March 7.
Dr. Hiram Houston, New York, Curability of Epilepsy, March 14.
Dr. Franz G. Alexander, Chicago, Practical and Flexible Psychoanalytic Technics, March 21.
Dr. Winfred Overholser, Washington, D. C., Psychiatry and the Law, March 28.
Francis O. Schmitt, Ph.D., Cambridge, Mass., Physics and Technology in the Development of Physical Medicine, April 4.
Carney Landis, Ph.D., New York, New Developments in Psychologic Tests, April 11.

ILLINOIS

Personal.—Dr. Roland R. Cross, Springfield, director of the Illinois Department of Public Health, has been named by Governor Green as chairman of an advisory committee on medical services to serve with the governor's committee on veterans' rehabilitation and employment.

Chicago

Personal.—Dr. Andrew C. Ivy, professor of physiology at Northwestern University Medical School, has been named to a three year term of membership to the National Advisory Cancer Council of the U. S. Public Health Service.

Robert Brown Named Medical Director at St. Luke's.—Dr. Robert F. Brown, assistant superintendent of the Stanford University Hospitals, San Francisco, has been appointed assistant administrator and medical director of St. Luke's Hospital, effective March 15. Dr. Brown graduated at the University of Oregon Medical School, Portland, in 1938, becoming assistant to the superintendent of Stanford University Hospitals in July 1942 and assistant superintendent in December 1943. Dr. Ambrose P. Merrill resigned as medical director January 1 (THE JOURNAL, January 6, p. 45).

Dr. Wakerlin New Chairman of Cancer Committee.—Dr. George E. Wakerlin, professor of physiology and head of the department, University of Illinois College of Medicine, has been elected chairman of the Chicago Cancer Committee, succeeding Dr. Ludvig Hektoen, who becomes honorary chairman. The committee will maintain offices at 139 North Clark Street, which will be shared by the Field Army of the American Cancer Society, of which Mrs. Arthur I. Edison is Illinois Commander, and where a central cancer information and referral center will be established.

Derrick Vail Named Professor of Ophthalmology at Northwestern.—Dr. Derrick T. Vail Jr., colonel in the Army medical corps and chief consultant to the Surgeon General in ophthalmology, has been appointed professor of ophthalmology and chairman of the department at Northwestern University Medical School. He will succeed the late Dr. Sanford R. Gifford, who was professor of ophthalmology at the medical school from 1929 until his death in February 1944. Dr. Vail graduated at Harvard Medical School, Boston, in 1923. Since 1926 he has been associated with the University of Cincinnati College of Medicine, first as instructor in ophthalmology and since 1937 as professor. Dr. Vail was Secretary of the Section on Ophthalmology of the American Medical Association from 1937 to 1942. He will take up his appointment at Northwestern as soon as he is released from the Army.

INDIANA

Executive Assistant for State Health Officer.—Mr. Walter J. Wolpert, formerly state director of training for the Federal Works Agency, has been appointed executive assistant to Dr. Thurman B. Rice, Indianapolis, acting secretary of the Indiana State Board of Health and acting state health commissioner. Mr. Wolpert will be essentially a business manager of the board of health and will be in charge of personnel and property, such as the building, equipment and automobiles. He will assist the commissioner in all sorts of matters which are nonprofessional.

KANSAS

Personal.—Dr. John L. Lattimore, Topeka, has resigned from the state board of health because he is now serving in the state house of representatives. Dr. Gilbert A. Leslie, McDonald, resigned because he was moving to Golden, Colo. ——Dr. and Mrs. Eben S. McIntosh, Burns, recently celebrated their golden wedding anniversary.

School Health Survey.—The Kansas State Board of Health is sponsoring a statewide school health study in cooperation with the state department of public instruction and other state agencies interested in child health, education and welfare. Ground work was laid at a series of committee meetings the week end of February 10, at which Clair E. Turner, Dr.P.H., temporarily on leave from the Office of the Coordinator of Inter-American Affairs, Washington, D. C., as health education officer, was in attendance.

MASSACHUSETTS

State Meeting Canceled.—The annual meeting of the Massachusetts Medical Society, scheduled for May 22-24 at the Hotel Statler, Boston, has been canceled.

Tufts Alumni Association's Annual Dinner.—On April 11 the Tufts Medical Alumni Association of Greater Boston will hold its annual dinner meeting at the Copley Plaza, Boston. Among the speakers will be Senator Claude D. Pepper, who will discuss the findings and recommendations of the senate subcommittee on wartime health and education, of which he is chairman, and Drs. Alonzo K. Paine, professor of obstetrics; Dr. Louis E. Phaneuf, professor of gynecology; Capt. Albert Warren Stearns, dean on leave; Dr. Dwight O'Hara, acting dean; Dr. Benedict F. Boland, clinical professor of gynecology, and Leonard Carmichael, LL.D., president of Tufts College.

MICHIGAN

Site Changed in Medical Center Program.—At a recent meeting of the board of education a resolution was approved recommending that the corporation counsel be requested to withdraw from the condemnation proceedings now in progress to acquire possession of the block bounded by Hastings, St. Antoine, Farnsworth and Theodore avenues (THE JOURNAL, Dec. 2, 1944, p. 905) and substitute the block bounded by Beaubien, St. Antoine, Theodore and Warren avenues. Under other condemnation proceedings now under way this would make available for the center the three block area bounded by Beaubien, St. Antoine, Frederick and Warren. Dr. Basil C. MacLean, medical director of the Strong Memorial Hospital, University of Rochester, has been employed by the Medical Science Center of Wayne University to help in analyzing the construction, operating and program figures of the center. Dr. MacLean is making a detailed study of the units involved in the first cycle. *Detroit Medical News* reports that, pending the completion of Dr. MacLean's work, the fund raising counsel has been temporarily discontinued.

State Society Launches New Radio Program.—The Michigan State Medical Society has inaugurated a series of radio broadcasts including music, songs and stories over Station WJR at a cost of more than $10,000 and under the

supervision of the society's special committee on radio. Dr. Clarence L. Candler, Detroit, chairman of the committee, gave the inaugural lecture February 16. Among the speakers participating in the series, which will run Friday evenings for fifteen minutes beginning at 7:15, Eastern War Time, are:

Dr. L. Fernald Foster, Bay City, Purposes of the Michigan State Medical Society, February 23.
Dr. William A. Hyland, Grand Rapids, Michigan Medical Service, March 2.
Dr. Oscar D. Stryker, Fremont, Medical Men in Service, March 9.
Dr. Wilfrid Haughey, Battle Creek, Psychiatry After the War, March 16.
Dr. Edward F. Sladek, Traverse City, Voluntary Programs of Medical Care, March 23.
Dr. Ray S. Morriah, Flint, Health Education of the Public, March 30.
Dr. Otto O. Beck, Birmingham, Protection Against Major Hazards of Illness, April 6.

A feature of the program is the opportunity to win a $25 war bond or $5 in war stamps each week. The contest includes the reporting of an interesting experience involving a doctor of medicine. In addition to Dr. Candler, other members of the committee on radio are Drs. Andrew S. Brunk, Detroit, president of the state society, and Patrick L. Ledwidge, Detroit. Another radio series sponsored by the state society featured dramatized skits.

MINNESOTA

The Judd Lectureship.—Dr. Allen O. Whipple, professor of surgery, Columbia University College of Physicians and Surgeons, New York, will present the annual E. Starr Judd lectureship in surgery at the University of Minnesota Medical School, Minneapolis, April 10, in the Museum of Natural History Auditorium. The title of his lecture will be "Problem of Portal Hypertension in Relation to Hepatosplenopathies."

Academy of Medicine Observes Twenty-Fifth Anniversary.—The Minneapolis Academy of Medicine celebrated its twenty-fifth anniversary with a dinner meeting at which Capt. Donald McCarthy (MC), chief of medicine, U. S. Naval Station Hospital, Great Lakes, Ill., discussed "Penicillin Therapy of Meningococcic Meningitis." Officers of the academy are Drs. Ernest R. Anderson, president; Jay C. Davis, vice president; Cyrus O. Hansen, secretary, and Thomas J. Kinsella, treasurer, all of Minneapolis.

Proposed Heart Hospital for Children.—The conversion of the Motley School in Minneapolis, now closed, into a heart hospital for children, has been proposed. Dr. Charles R. Drake, Minneapolis, is one of a committee of five appointed to take action on the project. Fifty thousand dollars has been offered for the building by the Variety Club, an organization of men in the entertainment field, with the intention of deeding it to the University of Minnesota and the stipulation that it be used as a heart hospital for children.

Chiropractor Returned to Workhouse.—An order signed by Judge Levi M. Hall of the Hennepin County District Court recently returned Michael J. Koehler, Minneapolis, to the Minneapolis workhouse to serve ten and one-half months remaining of a sentence imposed July 6, 1944 (THE JOURNAL, Aug. 19, 1944, p. 1150) for criminal abortion. Koehler had been released from the workhouse Oct. 20, 1944, after serving only forty-two days of his one year sentence on his lawyer's claim that Koehler was suffering from diabetes and chronic bronchitis and had to be under the care of his private physician. Koehler, whose chiropractic license had been revoked Sept. 6, 1944 following his plea of guilty to the performance of an illegal operation, was discovered by the women's bureau of the Minneapolis Police Department to be examining a woman patient at his old office seventeen days after being released from the workhouse and offering to do another criminal abortion for $200.

MISSISSIPPI

Postgraduate Lectures.—The Mississippi State Board of Health and the Tulane University of Louisiana School of Medicine, New Orleans, are cooperating in a series of postgraduate lectures to be given throughout the state the last week in March. Newspapers report that the series will be held in Jackson March 26, Hattiesburg March 27, Meridian March 28, Tupelo March 29 and Greenwood March 30. Among the instructors will be Drs. Ralph V. Platou, head of the department of pediatrics at Tulane, George A. Mayer of the department of obstetrics and Virginia F. S. Howard of the division of maternal and child health of the Mississippi State Board of Health.

NEBRASKA

State Meeting Canceled.—The Nebraska State Medical Association announces that its seventy-seventh annual assembly has been canceled. The meeting was scheduled for Lincoln, May 7-10.

NEW YORK

New York's Health.—The death rate from all causes for New York in 1944 was 11 per thousand of population, 7 per cent less than in 1943. Lower rates were recorded only twice in the past, 10.8 in 1941 and 10.9 in 1942. The epidemic of poliomyelitis in 1944 caused the death of 337 persons more than in any previous year except in 1916 and 1931. The number of births declined to 230,000, giving a rate of 16.6 per cent, 9 per cent less than in 1943. The infant mortality was 33 deaths under 1 year per thousand live births. Maternal mortality was 17 deaths per 10,000 live and still births, 14 per cent below the previous minimum of 1943 and one third the rate of 1934, the year beginning the decline in maternal mortality in the state. Death from tuberculosis gave a rate of 44.6, an all time low record. A new low rate was established for suicides, 10.3. The rate for homicides was 2.1. Deaths from motor vehicle accidents declined from 10 per cent to 11.4, the lowest since 1917.

New York City

Committee on Glaucoma.—Dr. Willis S. Knighton has been named chairman of the committee on glaucoma of the National Society for the Prevention of Blindness, succeeding the late Dr. Mark J. Schoenberg. Recent additions to the committee on glaucoma include Major Fred W. Heffinger, superintendent, and Dr. Ferdinand L. P. Koch, chief of the glaucoma clinic, Manhattan Eye, Ear and Throat Hospital.

The Doctors' Orchestra Resumes Rehearsals.—The Doctors' Orchestral Society announces that rehearsals have been resumed and now take place on the first and third Thursdays of each month at the National Hospital for Speech Disorders, 61 Irving Place, according to *New York Medicine*. The orchestra is functioning as a string symphony conducted by Mr. Fritz Mahler. Recently elected officers of the society are Dr. William H. Spielberg, president and concert master; Charles S. Gardner, D.D.S., vice president; Dr. Harold S. Belcher, secretary and Dr. Charles Auer, treasurer.

Society News.—Dr. Jacob M. Gershberg was recently elected president of the International Spanish Speaking Association of Physicians. Other officers include Drs. Ray Lyman Wilbur, San Francisco; James R. Goodall, Montreal, Que., and Juan B. Sacasa, Los Angeles, vice presidents. Dr. George W. Henry is chairman of the board of directors.——Vincent du Vigneaud, Ph.D., professor of biochemistry, Cornell University Medical College, gave the principal paper, on "Recent Concepts of Metabolism of Choline and Methionine," before the Clinical Society of the New York Diabetes Association, February 8, at the New York Academy of Medicine.——Recently elected officers of the New York Society of Physical Medicine include Drs. Karl Harpuder, president; Charles G. Buckmaster, vice president; Richard Kovacs, treasurer, and Madge C. L. McGuinness, secretary.

Symposium on Industrial Medicine.—The New York Post-Graduate Medical School and Hospital, Columbia University, announces an interdepartmental symposium on industrial medicine April 2-6 under the direction of Drs. Harry J. Johnson and Frank R. Ferlaino. In addition to members of the teaching staff of the medical school, the following guest speakers will participate:

Dr. Leverett D. Bristol, chairman, committee on education, Council on Industrial Health, American Medical Association.
Dr. C. Charles Burlingame, associate in psychiatry, Columbia University College of Physicians and Surgeons, and chairman, committee on industrial medicine, American Society for Research in Psychosomatic Problems.
Miss Patricia Edgerly, director, New York Medical Exchange.
Frederick B. Flinn, Ph.D., professor of industrial hygiene, DeLamar Institute of Public Health, Columbia University.
Dr. Forrest D. Gibson, Hartford, Conn., Hamilton Standard Propeller Division, United Aircraft Corporation.
Dr. Eugene J. Gillespie, Washington, D. C., tuberculosis control division, U. S. Public Health Service.
Dr. Edward C. Greene, medical director, American Air Lines.
Dr. Joseph P. Hoguet, medical director, Republic Aviation Corporation.
Dr. John F. Johnson, medical director, Eastern Aircraft Division, General Motors Corporation.
Dr. Anthony J. Lanza, assistant medical director, Metropolitan Life Insurance Company.
Dr. Raphael Lewy, chief medical examiner, New York State Department of Labor, Compensation Bureau, New York.
Dr. Richard M. Mills, Brooklyn, medical director, New York Telephone Company.
Dr. Dwight O'Hara, Boston, acting director, division of industrial medicine, Liberty Mutual Insurance Company.
Dr. Charles R. Williams, supervisor, industrial hygiene field service, Liberty Mutual Insurance Company.

John Scudder Goes to China to Organize Plasma Service.—Dr. John Scudder, director of the blood bank at the Presbyterian Hospital, arrived in Kunming, China, March 13, to organize the plasma service for the Chinese armies. In this work he will serve as a special consultant to Hsu Hsilin,

surgeon general of the Chinese Army Administration. Dr. Scudder is on leave of absence from his position at the Columbia University-Presbyterian Hospital Medical Center. Dr. Scudder went to China by airplane. The first Chinese blood bank, trained by Dr. Scudder at Presbyterian Hospital (THE JOURNAL, Aug. 14, 1943, p. 1137), has been functioning in Kunming since July 12, 1944 and has been supplying plasma to Chinese troops in Yunnan. The bank was organized in New York and was the first in the world entirely manned by Chinese doctors, nurses and technicians to prepare plasma for the armies of China. After a trial run in New York it was transferred to China. Dr. Scudder will assist the bank to overcome technical difficulties and to increase its output.

NORTH CAROLINA

State Medical Meeting Postponed.—For the first time since the Civil War the annual meeting of the Medical Society of the State of North Carolina has been postponed. It was scheduled to be held at Pinehurst, April 30-May 2. The action was voted on unanimously by the executive committee and all officers and committees are continued in office until such time as will seem practical to hold the next meeting. The postponement will continue until the ban for conventions is lifted.

University News.—Dr. Harold D. Green, formerly associate professor of physiology at Western Reserve University School of Medicine, Cleveland, has assumed the position of professor of physiology and pharmacology at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem. Robert W. Lackey, Ph.D., professor of physiology at Southwestern Medical Foundation School of Medicine, Dallas, will serve as visiting professor of physiology for the trimester beginning March 28. The extensive lantern slide collection of the late Dr. Charles Hartwell Cocke, Asheville, has been presented to the Bowman Gray School of Medicine and added to the teaching collection of the school. Bids for the new $250,000 outpatient department building were to be opened on March 20. Construction will begin immediately.

OHIO

New Assistant Commissioner of Mental Diseases.—Dr. Attilio LaGuardia, assistant director of Rockland State Hospital, Orangeburg, N. Y., has been appointed assistant commissioner of mental diseases for Ohio, according to the New York *Times*, February 18.

New Fund for Cancer Research.—The Ohio State University College of Medicine, Columbus, will receive $20,000 from the estate of the late Werner Strang, Columbus builder, for the establishment of the "Werner Strang and Asta K. Strang Foundation for Cancer Research."

Grant for Research on Communicable Diseases.—Western Reserve University has received a gift of $50,000 from the "associates" of Jack Heintz, Inc., Cleveland, to enable Dr. John A. Toomey, acting head of the department of pediatrics at the school of medicine and acting director of the Babies and Childrens Hospital, to carry on a five year program of research on infantile paralysis, whooping cough, measles and other contagious diseases, according to *Science*.

Industrial Commission Refuses Payments in Cleveland Disaster.—The State Industrial Commission has refused to make payments from its catastrophe fund to dependents of East Ohio Gas Company employees killed in the Oct. 20, 1944 Cleveland fire and directed the utility, a self insurer, to settle the claims. Seventy-three East Ohio workers were killed. The company contended that it comes under regulations of the commission for disaster payments from state funds providing a maximum of $7,000 plus $200 burial expenses for each victim, according to the state medical journal.

OKLAHOMA

Changes in Medical Faculty.—Dr. Basil A. Hayes was recently promoted to professor and chairman of the department of urology at the University of Oklahoma School of Medicine, Oklahoma City, and Dr. Ernst Lachmann to professor and chairman of the department of anatomy.

Memorial to Ned Smith.—The library of Dr. Ned R. Smith, president of the county society in 1934, has been presented to the library of the Tulsa County Medical Society by his wife, Mrs. Pluma Delore Smith, as a memorial to her husband. The collection contains not only first editions of the classics and translations from the French and German but also the latest textbooks in the field of neurology and psychiatry. Dr. Smith died in 1944.

OREGON

Officers of State Board.—Dr. Thomas D. Robertson, The Dalles, was recently elected president of the Oregon State Board of Health. Other officers include Drs. DeWitt C. Burkes, Portland, and Lorenzo D. Inskeep, Medford, vice presidents. *Northwest Medicine* reports that Dr. Frederick J. Stricker, who has resigned as state health officer, will continue as secretary of the state board until such time as Dr. Harold M. Erickson, the new state health officer, assumes the activities of the secretary's office (THE JOURNAL, March 3, p. 535).

PENNSYLVANIA

Ninety-One Years of Age.—Dr. George E. Benninghoff, Bradford, observed his ninety-first birthday February 10. He graduated at the University of Wooster Medical Department, Cleveland, in 1879. Dr. Benninghoff first started practice in Kendall Creek but settled in Bradford in 1886. The Bradford, *Star* stated that Dr. Benninghoff retired in 1932 after he had incurred a broken hip in a fall.

Society News.—On April 5 Dr. John W. G. Hannon, Washington, will discuss "Silicosis" before the Fayette County Medical Society.——Dr. William Bates, Philadelphia, will address the Lawrence County Medical Society in New Castle, April 5, on activities of the state medical society since the 1944 annual session. Capt. Charles H. Whalen, M. C., addressed the society recently concerning his experiences in an evacuation hospital in France.

Philadelphia

Changes in Health Bulletin.—During 1945 the *Philadelphia Health Bulletin*, published by the Philadelphia Department of Public Health, will be issued monthly instead of bimonthly and as near the first of the month as possible.

Hospital News.—Kensington Hospital for Women terminated its activities on February 1 as the result of lack of funds and a shortage of nurses and transferred its functions to the Episcopal Hospital. The closed hospital was founded in 1883 by the late Dr. Howard A. Kelly.

Pittsburgh

New Allergy Group.—The Pittsburgh Allergy Society was recently organized with Drs. Leo H. Criep as president and Dr. James A. Mansmann, secretary-treasurer.

Society Moves Offices.—The Allegheny County Medical Society has moved its offices to 225 Jenkins Building. The offices were formerly located at 5092 Jenkins Arcade Building.

SOUTH CAROLINA

Building Fund Started for Permanent Home.—Since Dr. Hugh E. Wyman recently started a building fund for the permanent home of the Columbia Medical Society of Richland County with a gift of a $500 bond, the fund has grown to $4,000 through similar contributions.

Hospital Superintendent Becomes Director of Research.—Dr. Charles F. Williams, medical superintendent of the South Carolina State Hospital, Columbia, for thirty years, has resigned to become director of the hospital's research activities, effective May 1, according to the Sumter *Daily Item*. His successor as superintendent will be Dr. Coyt Ham. The report indicated that Dr. Williams would work toward building up the hospital's research foundation, established by the late Mrs. W. S. Brown, Columbia.

Urge Psychology School as Medical Adjunct.—A full time school of psychology to be connected with the Medical College of the State of South Carolina, Charleston, and a system of traveling psychiatric clinics was recommended for South Carolina by Dr. Victor H. Vogel of the U. S. Public Health Service, consultant in psychology to the National Office of Vocational Rehabilitation. The recommendation stemmed from a discussion of the expanded rehabilitation program which resulted from the recent amendment of the Vocational Rehabilitation Act.

TEXAS

Conference on Venereal Diseases.—A one day conference on the control of venereal diseases was held in San Antonio, March 5, attended by about 300 representatives of civilian and military agencies. The conference, second of three regional meetings aimed at action to reduce the rate of venereal disease in the nation, followed one at Oklahoma City, March 2-3. The third session was held in Columbia, S. C., March 8-9. Actions taken at the conference include the adoption of a resolution backing two house bills pending in the Texas legislature, one requiring blood tests for syphilis for both parties applying for a marriage license, the other requiring attending physicians to take blood tests for syphilis of pregnant women. Legislation for a state supported institution for delinquent

juvenile Negro girls was among the resolutions made, as was a move for legislation permitting the courts to commit promiscuous sex offenders to institutions for undetermined periods for rehabilitation. It was also suggested that a state school to train social workers be set up in Texas and that a child welfare unit be maintained in each county.

VIRGINIA

Survey to Determine Communities Needing Physicians.—The Medical Society of Virginia, through its department of clinical and medical education, has started a survey to find out the communities in the state which need physicians. A report form has been prepared to assist communities in making known their needs. The Roanoke *Times*, February 26, reported that the medical society is not assuming responsibility for the placing of the physicians but is functioning solely to collect and distribute information with regard to community needs.

University News.—Dr. Stephen H. Watts, former professor of surgery, University of Virginia Department of Medicine, Charlottesville, has added a gift of $5,000 to an earlier gift of $15,000 for a Book Fund for the medical library. A gift of $500 has been received from Dr. Francis H. McGovern, Danville, for the purchase of books in the fields of ophthalmology and otolaryngology for the medical library. The board of directors of the Virginia Society for Crippled Children and Physically Handicapped Adults has given a grant of $2,500 to Dr. Hugh Page Newhill, assistant professor of neurology and psychiatry at the university, to support his work in the convulsive disorder clinic at the University of Virginia Hospital.

The McGuire Lectures.—The sixteenth annual Stuart McGuire Lectures and the spring postgraduate clinic of the Medical College of Virginia, Richmond, have been combined this year. Dr. Reginald H. Smithwick, Boston, will give the Stuart McGuire lectures April 5 and 6 on "Surgery of the Autonomic Nervous System in Peripheral Vascular Disorders and for the Relief of Visceral Pain" and "Surgical Intervention on the Autonomic Nervous System in Hypertensive Cardiovascular Disease." On April 6 a symposium on hypertension will be conducted by the following:

Dr. Irvine H. Page, Cleveland, Physiologic, Medical and Surgical Aspects of Hypertension.
Drs. Harvey B. Haag and William B. Porter, Richmond, Medical Aspects of Hypertension.
Dr. Benjamin Castleman, Boston, Pathologic Aspects of Hypertension.
Dr. Tiffany J. Williams, Charlottesville, Hypertension in Pregnancy.

WEST VIRGINIA

Personal.—Dr. Thomas L. Harris, Parkersburg, president of the West Virginia State Medical Association, has been named by Governor Clarence W. Meadows to a four year term as a member of the board of governors of West Virginia University, Morgantown, effective March 12.

Changes in Hospital Superintendents.—Dr. George E. Gwinn, Beckley, has been named by Governor Clarence W. Meadows as superintendent of Pinecrest Sanitarium to succeed Dr. Erland H. Hedrick, who resigned (THE JOURNAL, Dec. 30, 1944, p. 1160) after being elected a member of Congress from the sixth congressional district. Dr. Gwinn has been serving as acting superintendent since January 1. Previous to that date he had served for several years as medical director at the sanitarium.

Compulsory Test for Syphilis.—After June 5 every pregnant woman residing in West Virginia must undergo a standard serologic test for syphilis. The West Virginia legislature, seeking a means to prevent the birth annually in this state of hundreds of children with syphilis, enacted into law a bill (H. B. 9) making it mandatory on every physician engaged to attend a pregnant woman to acquaint her with the provisions of the new law requiring that a standard laboratory test for syphilis be made at the state hygienic laboratory or at other laboratories approved by the state health department. The laboratory will provide a report in triplicate showing the results of the test. Forms will be prepared and furnished by the state health department. The original of the report will be sent to the physician submitting the specimen, a duplicate will be forwarded to the bureau of venereal diseases during the week the test is performed, and the triplicate will be retained by the laboratory for its files. The law provides that all laboratory reports shall be confidential and shall not be open to public inspection. Every physician required to report births and stillbirths shall state on each certificate whether a blood test was performed during pregnancy on a specimen of blood taken from the woman who bore the child. If the test was made, the physician will report the name of the test used, the date performed and the name of the laboratory making the test. If no test was made, the physician must state the reason therefor. The result of the test must not in any case be reported on the birth certificate. As passed by the legislature, the law provides that the serologic tests are to be made by the state hygienic laboratory without charge. It is further provided that, on request, specimens are to be obtained without charge from pregnant women by county and district health officers. In areas where the services of a district or county health officer are not available the state health department is to assume the responsibility of obtaining the required blood specimens. There is to be no charge for this service.

WISCONSIN

Proposed Division of State Into Districts.—The state board of health will ask the 1945 legislature for the authority to divide the state into twenty sanitary districts instead of nine, which were set up in 1936, and for appropriations to staff and maintain these districts as fast as personnel can be acquired, according to the state medical journal. Although the proposed legislation will seek twenty districts, the board has plans for only seventeen in the near future.

College of Surgeons Holds Chapter Meeting.—The Wisconsin Chapter of the International College of Surgeons will offer the following program at the University Club of Milwaukee, March 28, the speakers to discuss the use of penicillin in the specialties indicated:

Dr. Samuel G. Higgins, Milwaukee, ophthalmology.
Dr. Matthew N. Feiler spiel, Milwaukee, oral surgery.
Dr. Lemuel D. Smith, Milwaukee, orthopedic surgery.
Dr. Rudolph W. Roethke, Milwaukee, obstetric surgery.
Dr. Walter M. Kearns, Milwaukee, urology.
Dr. Victor F. Marshall, Appleton, abdominal surgery.

GENERAL

Examination of Medical Technologists.—The Registry of Medical Technologists of the American Society of Clinical Pathologists announces that the spring examination of candidates for registration will be held in various parts of the United States and Canada on May 18.

Journal of Investigative Dermatology Resumes Publication.—The Society for Investigative Dermatology announces the resumption of publication of their periodical, the *Journal of Investigative Dermatology*, which temporarily suspended publication in 1942 on account of war conditions. The first number of volume 6 appeared in February. It will be issued bimonthly, one volume a year, at $6 per volume, by the Williams and Wilkins Company, Baltimore 2.

Manuscripts Invited in Norton Medical Award.—December 1 has been announced as the final date for submission of manuscripts in the Norton Medical Award available through the publishers, W. W. Norton & Company, 70 Fifth Avenue, New York 11. The award consists of $3,500, $1,000 outright and the remainder as an advance against royalties. The contestant must be a professional worker in the field of medicine or may be two or more authors writing in collaboration, either of whom is a professional worker in the field of medicine. Subject matter may be autobiography, biography, history of any phase of medicine or the exposition of medical science or of medical theory. Additional information may be obtained from W. W. Norton & Company. Dr. Carl A. L. Binger, New York, was the recipient of the first award for his work on "The Doctor's Job" (THE JOURNAL, January 20, p. 175).

Meetings Canceled.—The Third War Conference on Industrial Medicine and Postwar Planning, scheduled for April 23-28 at the Drake Hotel, Chicago, has been canceled. *Industrial Hygiene News Letter* reports that, as far as is known at this time, none of the five associations which had planned to meet in Chicago will be holding a national meeting during the year. These groups are the American Industrial Hygiene Association, American Association of Industrial Physicians and Surgeons, National Conference of Governmental Industrial Hygienists, American Association of Industrial Nurses and American Association of Industrial Dentists.—The Southwestern Medical Association has canceled its annual meeting, which was scheduled for Paducah, Ky., in May, the Paducah *Press* reported March 2.—The meeting of the American Association of Genito-Urinary Surgeons, which was tentatively scheduled for June 7-9 at Stockbridge, Mass., has been canceled.

Fellowships in Allergy Available.—The American College of Allergists announces that the medical graduate committee of the Mayo Foundation has approved the placing of a fellowship at the Mayo Clinic and the Mayo Foundation. The selection of a person to receive the fellowship will be

made by Dr. Charles F. Code, assistant professor of clinical physiology, at the medical school, foundation and clinic and the medical graduate committee of the University of Minnesota Graduate School, Rochester-Minneapolis. The stipend will be $1,500 a year with provision for a continuation of the fellowship for a second year, if desirable. According to the *Annals of Allergy* the granting of such fellowship is necessarily postponed until or toward the end of the war because Dr. Code is at present engaged in full time war research. Another fellowship has been created by the college of allergists to continue for two years and will be used to augment research directed at gaining fundamental knowledge necessary for the development of satisfactory methods for the standardization of allergenic extracts. Information concerning this fellowship may be obtained from Dr. George E. Rockwell, 2500 Melrose Avenue, Cincinnati 6.

Narcotic Violations.—The U. S. Bureau of Narcotics announced the following violations of the federal narcotic law:

Dr. Paul H. Pernworth, Venice, Ill., fined $1,500 and placed on probation for three years following his plea of guilty in the U. S. District Court at Springfield, Ill.

Dr. John Henry Lee Staples, Afton, Okla., received a suspended sentence of three years and was placed on probation for a similar period.

Dr. Alvin Schuman, Brooklyn, sentenced to a term of two and one-half years following his plea of nolo contendere in the U. S. District Court at Brooklyn.

Dr. William H. Goldschmidt, alias Hilarius W. Goldsmith, Wilhem Goldschmid and Vidor Goldschmid, an alien, New York, sentenced to imprisonment for eighteen months and placed on probation for a period of two years to begin after completion of the sentence following his plea of guilty in the U. S. District Court in the southern district of New York.

Dr. Gaston B. Justice, Asheville, N. C., pleaded guilty to an indictment containing three counts; he was fined $300 on count one and judgment was suspended on counts two and three until the May 1945 term of court.

Dr. David J. Simpson, Lakeland, Fla., received a suspended sentence of two years Nov. 23, 1944 and was placed on probation for two years following his nolo contendere plea in the U. S. District Court of attempt to violate the federal narcotic law.

Dr. Nicholas A. Tonis, New York, received, Dec. 5, 1944, a suspended sentence of one year and one day in prison following his plea of guilty to violation of the federal narcotic law and was placed on probation for two years and fined $500.

Million Dollars for Program in Physical Medicine.—The National Foundation for Infantile Paralysis has appropriated $1,267,600 to train qualified physical therapists. Directed by a special committee in the field of physical therapy, the funds will be expended as follows: $1,107,000 for scholarships to train new physical therapists, $82,000 for fellowships to provide additional teachers and $78,600 for general development of the field of physical therapy. The National Foundation, since it was organized in 1938, has expended up to now more than a million dollars in the development of the fields of physical medicine and physical therapy, according to a release March 19. The new program is designed to provide urgently needed personnel necessary to fulfilling the National Foundation's pledge that complete medical care will be assured, so far as possible, for infantile paralysis victims, regardless of age, race, creed, color or lack of financial ability to pay for services rendered. The special committee formed to assist in the development of the new program includes the following:

Dr. Irvin Abell, Louisville, Ky., chairman.

Dr. Donald B. Armstrong, New York, second vice president, Metropolitan Life Insurance Company.

Dr. Max M. Peet, Ann Arbor, Mich., chief, neurosurgical section, University Hospital, and professor of surgery, University of Michigan Medical School.

Dr. Morris Fishbein, Chicago, editor of THE JOURNAL.

Dr. Arthur L. Watkins, Boston, director of the department of physical therapy, Massachusetts General Hospital.

Dr. Melbourne G. Westmoreland, Chicago, staff, Council on Medical Education and Hospitals, American Medical Association.

Miss Jessie Stevenson, New York, president of the American Physiotherapy Association.

Miss Lucille Daniels, acting director, division of physical therapy at Stanford University, Stanford University, Calif.

Dr. Don W. Gudakunst, New York, medical director, National Foundation for Infantile Paralysis.

Basil O'Connor, LL.D., New York, president, National Foundation for Infantile Paralysis.

Miss Catherine Worthingham, New York, director of technical education, National Foundation for Infantile Paralysis.

Preparation for entrance into approved schools of physical therapy requires graduation as a nurse, or physical educator, or two years' college training, including biology and other basic sciences. Applications for scholarships should be made to the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, or to the American Physiotherapy Association, 1790 Broadway, New York 19.

LATIN AMERICA

Health Activities in Latin America.—*Information Booklets for Biologists.*—The Union of American Biological Societies has published booklets dealing with graduate instruction and research in the biologic sciences in the United States for distribution to biologists and biologic centers throughout the Latin American republics. Science Service has cooperated in the printing and distribution of the booklets. Any one in the United States desiring a copy of either the Spanish or Portuguese booklet may secure one from Elmer G. Butler, Ph.D., president of the Union of American Biological Societies, Princeton University, Princeton, N. J.

Congress Against Tuberculosis.—Dr. Ovidio Garcia Rosell, Lima, Peru, was elected president of the Pan American Congress Against Tuberculosis which was held in Havana, Cuba, January 15-21. Dr. Juan J. Castillo Arango, professor of medicine, University of Havana, Cuba, as president of the recent congress, presided over the scientific sessions and Dr. Antonio Navarrete, Sierra, assistant professor of medicine, presided over the business session. Among the speakers at the congress were:

Capt. Sol Roy Rosenthal, M. C., Reports of the Results of BCG Vaccination.

Dr. Leo Eloesser, San Francisco, Tuberculous Suppurations and Extrapulmonary Fistulas in the Trachea and Bronchi.

Herman E. Hilleboe, Medical Director, U. S. Public Health Service, Objectives of Tuberculosis Control of the U. S. Public Health Service.

Dr. Chevalier L. Jackson, Philadelphia, The Anatomical Relationship of the Bronchus and Lungs from the Viewpoint of the Bronchoscopist.

Other representatives from the United States included Dr. J. Winthrop Peabody, Washington, D. C., and Mr. Murray Kornfeld, Chicago, immediate past president and executive secretary respectively of the American College of Chest Physicians.

Campaign Against Leprosy.—Colombia will carry out an extensive campaign against leprosy this year at an estimated cost of 3,000,000 pesos, according to a newspaper report, February 9. Existing facilities will be improved and a colony for 1,000 leprous patients will be established in the state of Santander, with special plans for the care of the children. Specialists in leprosy will be sent to the United States and Brazil for further study, the New York *Times* announces.

Personal.—Dr. Nicolau Moraes Barros, São Paulo, Brazil, has been named research fellow of the Rockefeller Foundation on the staff of Harvard Medical School, Boston.

FOREIGN

Personal.—Dr. Daniel Fowler Cappell, professor of pathology at the University of St. Andrews since 1931, has been appointed to the chair of pathology at the University of Glasgow, in succession to the late Dr. John Shaw Dunn.——Sir John Boyd Orr has resigned as director of the Rowett Research Institute, Bucksburn, Aberdeenshire. The position also carries the directorship of the Imperial Bureau of Animal Nutrition and the joint editorship of *Nutrition Abstracts and Reviews.*

Research Institute to Be Named for Scientist.—Plans to establish in Palestine the Weizmann Institute of Science as a tribute to Chaim Weizmann, Sc.D., were announced on his seventieth birthday recently. The institute, if plans proceed, will be composed of four departments devoted to research in the fields of physical chemistry, pharmacology and chemotherapy, plastics and nutrition. Dr. Weizmann is director of the Daniel Sieff Research Institute in Rehovoth, Palestine.

Prizes Offered.—During the All-India Medical Conference in Cawnpore during the Christmas holidays, three prizes will be awarded, according to the *Journal* of the Indian Medical Association. A gold medal has been offered by Dr. Kumud S. Ray, Calcutta, ex-president of the association, for the best paper on puerperal sepsis. Capt. Kalidas L. Saha has offered a gold medal for the best paper on any subject in pharmacology, and Kaisar-i-Hink of Jamalpur has offered a gold medal in memory of his deceased son, Dr. Satyendra N. Sen, for the best paper on "intestinal obstruction and other complications of appendicitis, how to prevent and treat such complications and save the patients from the cruel sufferings and death."

New Dutch Medical Association.—In anticipation of the tremendous demands that will be made on the medical profession of the Netherlands when the still occupied provinces will have been freed and immediate alleviation must be brought to millions of victims of frost and famine, the physicians in the liberated area have formed an association to centralize their functions for a speedy rehabilitation of public health, according to the Netherlands Information Bureau. A central medical information bureau has now been established in Tilburg, in North-Brabant province, while a fortnightly periodical, *Medisch Contact* (Medical Contact), will keep the members of the new organization informed regarding health conditions as they will be found in the northern provinces. At the same time the association will represent the physicians in matters of an economic nature.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 24, 1945.

A Faculty of Ophthalmologists

The Council of British Ophthalmologists has resolved that there is need for an authoritative and representative body to guide ophthalmologists through the intricate and important problems to be settled in the near future, to represent their interests to the state and to coordinate their efforts, so that in the coming reorientation of the medical service of the country the greatest good may accrue to the people, while at the same time the interests of the profession may be preserved. Although circumstances may necessitate that changes be gradual, fundamental principles are now being evolved which will profoundly affect the medical profession and the community at large. For the ophthalmologic services the alternative is to have policies imposed by others or to establish an authoritative body able to initiate and criticize policy.

Some of the immediate problems which require examination and early solution are of great moment. The government's proposal for a national health service deals vaguely with ophthalmologic service, although it is clear that it intends to establish such a service. The Council of British Ophthalmologists proposes the establishment of a Faculty of Ophthalmologists which would have more weight than itself if made more directly representative of the whole body of ophthalmologists in the country. It will be the first task of the faculty to examine the many questions arising in connection with the government's scheme. Its aim will be, in collaboration with the appropriate ministries and other bodies concerned, to play an important part in determining the form which the ophthalmologic service will take. This raises questions not only of conditions of service but of the relation of the ophthalmologist to the dispensing and sight testing opticians, the methods of lens supply and the establishment and control of clinics. In addition to these medicopolitical matters the questions of education and research, clinic and hospital policy, industrial and other problems will assume importance in the immediate future.

The functions of the faculty will be (1) to encourage suitable standards of education in ophthalmology for undergraduate and postgraduate students, (2) to encourage research in ophthalmology and cognate subjects, (3) to secure such conditions in ophthalmic practice as will attract persons of high professional attainments and afford ample scope for the exercise of their abilities, (4) to maintain a high ethical standard and (5) to act as an authoritative body for consultation in matters of ophthalmologic interest. The faculty will consist of members and associates. Only ophthalmologists of full consultant status will be eligible for membership. They shall be (1) ophthalmologic surgeons to hospitals recognized as schools of ophthalmology by universities or other medical examining bodies, (2) other ophthalmologic surgeons who have been engaged for at least five years in full time practice as specialists approved by the council (provisionally these shall be general hospitals of more than 200 beds and ophthalmologic hospitals of more than 20 beds), (3) those who have retired from the appointments specified and (4) other ophthalmologic surgeons of consultant rank approved by the council, including those in the services or holding government appointments. For associate, any ophthalmologist who has been in at least two years full time practice as a specialist will be eligible. It is anticipated that the new faculty will work in cooperation with the universities and medical corporations.

Jobs for Those Disabled in Fighting for Their Country

An appeal that special consideration be shown men and women disabled in the country's service was made by Mr. Bevin, minister of labor, at a luncheon commemorating the silver jubilee of the National Industrial Council for Road Transport Industry. Mr. Bevin said that veterans may not be able to adjust themselves at once to the conditions which they will find when they return. In particular the disabled man or woman presents a difficult problem. The Ministry of Labor has done what it could to insure that industry take a proper proportion of such men and women, and Bevin felt entitled to ask that management should make a special study of the problem. A man with only one leg, for instance, could be a very good driver if properly trained, and experience had shown that those in other ways physically handicapped could do a good deal. In the road transport industry certain standards of fitness were laid down, but he hoped that exceptions would be made in the case of disabled veterans. If training or specialist treatment was needed to make such persons fit for work, the Ministry of Labor would be willing to cooperate. He had arranged for wide research to discover how persons with every possible type of disablement could be provided with a place in industry, for his experience has shown that the higher the skill and the more effective the occupation such persons could acquire, the more they were helped to conquer their disability.

Sir Henry Gauvain

Sir Henry Gauvain, a pioneer in the treatment of surgical tuberculosis, has died. Born in 1878, he received his medical education at St. Bartholomew's Hospital and qualified in 1906. Not long after he qualified he was appointed the first medical superintendent of the home for children suffering from surgical tuberculosis, founded at Alton by Lord Mayor Treloar. He soon showed his originality by objecting to the term "surgical tuberculosis," pointing out that the disease was a general one requiring general treatment—"life in the open air, far from towns, in a dust and germ free atmosphere and under the bactericidal and tonic action of the sun." He drew attention to the model provided by the treatment at Berck-sur-Mer on the French coast, which he visited. With the traditional conservatism of this country, many of the distinguished physicians and surgeons of the day opposed his innovations, but he prevailed. He thought that the best results could be obtained by having two conjoined establishments, one in the country, the other at the seaside. This plan was realized when his hospital opened a seaside branch. After the first world war he spent much of his time in traveling and lecturing. In 1926 he lectured in the United States and Canada, and in 1936 he received the Distinguished Service Gold Key of the American Congress of Physical Therapy. In 1935, when the British Medical Association met in Australia, he was president of the Section of Tuberculosis and Public Health.

Marriages

John Winthrop Pennock, Syracuse, N. Y., to Mrs. Mary Farrand Hall of New York in Berkeley, Calif., February 9.

Edward James Mortell, Oshkosh, Wis., to Miss Frances Carrington Ellis of Waynesboro, Va., December 16.

M. Herbert Barker to Miss Marjorie Leigh, both of Chicago, in Washington, D. C., in February.

Clinton Childs Horton Jr., Pendleton, S. C., to Miss Rebecca Lane of Atlanta, Ga., December 17.

Fred Carlton McCall, Norton, Va., to Miss Evelyn Marguerite Carter of Farmville, January 1.

Deaths

Charles McDaniel Rosser ✠ Dallas, Texas, medical educator and organizer, died at the Gaston Hospital January 27, aged 83.

Dr. Rosser was born in Cuthbert, Ga., Dec. 24, 1862. He studied at the East Texas Academic Institute and graduated at the University of Louisville Medical Department in 1888. Fortified with an ambition to become a doctor of medicine, Dr. Rosser entered a junior clerkship in a Pittsburg, Texas, drugstore, where the owner, a physician, lent him books and periodicals for study. He later became a "traveling salesman" and school teacher to obtain money for further study. In his autobiography, "Doctors and Doctors," Dr. Rosser attributed much of his zeal to a country practitioner who took him for a companion during the progress of his learning "to see the practice of medicine from the inside." After his graduation Dr. Rosser started practice in Waxahachie, Texas, later moving to Dallas, where he soon became city health officer and superintendent of the North Texas Hospital for the Insane at Terrell. In 1900 he led a movement to establish a medical college in Dallas, which resulted in the organization of the Medical Department of the University of Dallas, now known as Baylor University School of Medicine, where for many years he served as professor of clinical surgery, later becoming emeritus. He was the founder of the Good Samaritan Hospital, which later became a teaching unit of Baylor.

Always an active organizer, Dr. Rosser was one of those instrumental in founding in 1906 the Medical Association of the Southwest, of which he was the first president. This association, covering the states of Missouri, Kansas, Arkansas, Oklahoma and Texas, was later taken over by the newer founded Southern Medical Association. He was also active in the creation of the Dallas Southern Clinical Society. He was once president of the North Texas Medical Association, of the Dallas County Medical Society, an officer of the Southern Surgical and Gynecological Association and chairman of the state board of health. Shortly after his graduation from medical school he became interested in the activities of the Texas State Medical Association, subsequently participating on committees and holding such offices as the vice presidency and presidency. In 1923, as the result of his energies as chairman of a council on legislation and public instruction of the state society, when he directed a statewide educational campaign against quackery, an amendment was added to the state medical practice act providing an injunction against illegal practitioners. In 1929 and 1931 Dr. Rosser was a member of the House of Delegates of the American Medical Association.

In 1923 at a public gathering he was presented with a silver loving cup to mark his contribution to state health. The occasion observed also the celebration of the opening of the Medical Arts Building in Dallas, a project promoted by a committee of which Dr. Rosser was chairman. In 1930 special ceremonies marked the presentation of a portrait to Baylor to pay tribute to its founder.

Ira Frank ✠ Highland Park, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1899; specialist certified by the American Board of Otolaryngology; member and in 1936-1937 president of the American Laryngological, Rhinological and Otological Society; member of the American Academy of Ophthalmology and Otolaryngology, Chicago Medical Society, Institute of Medicine of Chicago, Chicago Laryngological and Otological Society and the Society of Medical History of Chicago; corresponding member of the Société de Laryngologie des Hôpitaux de Paris; fellow of the American College of Surgeons; served as attending otolaryngologist at the Grant Hospital in Chicago and consulting otolaryngologist to the Michael Reese Hospital and the Sarah Morris Hospital for Children, Chicago; died January 20, aged 67, of coronary occlusion.

Sigmund Krumholz ✠ Chicago; University and Bellevue Hospital Medical College, New York, 1899; professor and chairman of the department of neurology, Cook County Graduate School of Medicine; formerly assistant and associate professor of neurology at Northwestern University Medical School; served as assistant of nervous and mental diseases at Rush Medical College and associate in nervous diseases at the West Side Dispensary of the United Hebrew Charities; member of the Chicago Neurological Society; on the staffs of the Cook County and Mount Sinai hospitals; consulting neurologist and psychiatrist at the Orthodox Jewish Old Peoples Home; died January 26, aged 73, of coronary thrombosis and coronary sclerosis.

William Freas Confair, Benton, Pa.; University of Pittsburgh School of Medicine, 1932; fellow of the American College of Physicians; member of the American Medical Association; interned at the U. S. Marine Hospital, Norfolk, Va.; served on the associate staffs of the Bloomsburg Hospital, Bloomsburg, and the Berwick Hospital, Berwick; commissioned a first lieutenant in the medical reserve corps of the U. S. Army June 9, 1932; began active duty as a captain on Dec. 26, 1940 and later became a major; honorably discharged because of physical disqualification, Oct. 25, 1943; died in the George F. Geisinger Memorial Hospital, Danville, January 14, aged 36, of cerebral hemorrhage.

Henry R. Boettcher ✠ Chicago; the Hahnemann Medical College and Hospital, Chicago, 1890; Harvey Medical College, Chicago, 1896; at one time associate in ophthalmology and instructor (extramural) in laryngology and otology at Rush Medical College; formerly on the staffs of the Illinois Charitable Eye and Ear Infirmary and the Central Free Dispensary; trustee, member and past president of the staff of the Englewood Hospital; eye surgeon for the Wabash Railroad; served as a director of the First National Bank of Englewood; died February 5, aged 78, of uremia and hypertensive heart disease.

Julius Ernest Lackner ✠ Chicago; Rush Medical College, Chicago, 1910; formerly on the faculty of his alma mater; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; served as president and secretary of the Chicago Gynecological Society; member of the Central Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; on the staffs of the Michael Reese Hospital and the Highland Park (Ill.) Hospital; died at his home in Highland Park, January 3, aged 57, of coronary thrombosis.

William Alfred Ackroyd ✠ Binghamton, N. Y.; Albany Medical College, 1913; served during World War I; member of the Endicott Johnson Medical Department; on the staff of the Wilson Memorial Hospital, Johnson City, where he died February 9, aged 58, of aneurysm of the aorta.

Walter S. Alexander, Fond du Lac, Wis.; the Hahnemann Medical College and Hospital, Chicago, 1898; died November 5, aged 71, of arteriosclerosis and nephritis.

Anna L. Allaben, Morristown, N. J.; New York Medical College and Hospital for Women, Homeopathic, New York, 1894; for many years president of the local board of health and school physician; on the staff of the All Souls Hospital, where she died January 2, aged 86, of myocarditis and carcinoma of the descending colon.

Ralph Willis Atwater ✠ Syracuse, N. Y.; Cornell University Medical College, New York, 1904; on the staff of the Crouse-Irving Hospital, where he died December 9, aged 63, of coronary thrombosis.

Caroline Marcy Baldwin, Rochester, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1901; member of the American Medical Association; died November 10, aged 65, of cerebral embolism and arteriosclerotic heart disease with auricular fibrillation.

Fredrick Dale Barker, Granville, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1890; during World War I served overseas as a captain in the Red Cross; formerly chief of staff, Miami Valley Hospital, and division surgeon for the Baltimore and Ohio Railroad in Dayton; since 1914 trustee of Denison University; at one time chairman of the board of public works; developed a water system for Granville; died January 16, aged 84, of chronic myocarditis with anasarca.

Virgil F. Barker, Cincinnati; Medical College of Ohio, Cincinnati, 1900; served during World War I; died in the Cincinnati General Hospital January 9, aged 67, of cerebral thrombosis and hypertensive cardiovascular disease.

Albert Armington Barrows ✠ Providence, R. I.; Harvard Medical School, Boston, 1902; member of the New England Surgical Society; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; on the courtesy staff, South County Hospital, Wakefield; consulting surgeon, Westerly Hospital, Westerly, and Providence City Hospital; died October 9, aged 66, of coronary occlusion.

Charles Barton, Los Angeles; Detroit Homeopathic College, 1909; served as assistant city health officer; served during World War I; died recently, aged 63.

Harry Baum, St. Joseph, Mo.; University Medical College of Kansas City, Mo., 1900; veteran of the Spanish-American War; died in the Missouri Methodist Hospital December 30, aged 64, of lobar pneumonia.

Edward C. Beck, St. Louis; St. Louis College of Physicians and Surgeons, 1896; on the staffs of the Deaconess Hospital, Josephine Heitkamp Memorial Hospital and the Alexian Brothers' Hospital, where he died January 4, aged 80, of carcinoma of the prostate, cerebral hemorrhage and pneumonia.

Robert Marvin Benson, Carrollton, Mo.; University Medical College of Kansas City, 1905; died January 3, aged 62, of cerebral hemorrhage.

Martin Biederman ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1922; on the staffs of St. Elizabeth's Hospital, Gouverneur Hospital and St. Clare's Hospital, where he died January 7, aged 46, of bronchopneumonia.

Junius S. Billings, White Hall, Ill.; American Medical College, St. Louis, 1896; member of the American Medical Association; died January 13, aged 77, of cerebral hemorrhage.

Oscar W. Bonner, Delaware, Ohio; Columbus Medical College, 1892; member of the draft board during World War I; formerly member of the board of health; died December 11, aged 74.

Alfred Joseph Bonneville ✠ Hatfield, Mass.; College of Physicians and Surgeons, Boston, 1904; Medico-Chirurgical College of Philadelphia, 1911; district supervising censor of the Massachusetts Medical Society for many years; on the staff of the Cooley Dickinson Hospital, Northampton, where he died January 11, aged 73, of heart disease.

Josiah Slicer Bowen, Baltimore; University of Maryland School of Medicine, Baltimore, 1903; served as deputy state health officer of the state department of health and as head of the Baltimore County Health Department; past president of the Medical and Chirurgical Faculty of Maryland; died October 20, aged 62, of coronary thrombosis.

William W. Bowen, Fort Dodge, Iowa; State University of Iowa College of Medicine, Iowa City, 1895; fellow of the American College of Surgeons; formerly vice president and in 1933 president of the Iowa State Medical Society; past president of the Webster County Medical Society, Iowa X-Ray Club and the Austin-Flint and Twin Lakes Medical Societies; member of the staffs of the Lutheran Hospital and St. Joseph Mercy Hospital, where he died December 20, aged 75, of cerebral arteriosclerosis and progressive cerebral thrombosis.

Daniel W. Bowers, Calhoun, Ill.; Barnes Medical College, St. Louis, 1895; died in the Olney Sanitarium, Olney, January 16, aged 83, of carcinoma of the urinary bladder.

Harvey Christian Bowers, Akron, Ind.; St. Louis University School of Medicine, 1902; died in St. Joseph Memorial Hospital, Kokomo, February 11, aged 70, of injuries received when the automobile in which he was driving was struck by a truck.

Claude McKinley Burpee ✠ Augusta, Ga.; University of Georgia School of Medicine, Augusta, 1922; professor of pediatrics at his alma mater; member of the American Academy of Pediatrics; specialist certified by the American Board of Pediatrics, Inc.; formerly served an internship and residency at St. Louis Children's Hospital; pediatrician in chief at the University Hospital, where he had served as intern and resident; died December 2, aged 47, of coronary thrombosis.

George Verne Buxton, Milwaukee; University of Arkansas School of Medicine, Little Rock, 1927; served during World War I and on the staffs of various Veterans Administration facilities; died November 21, aged 51, of cerebral hemorrhage and hypertension.

Omer U. Carl ✠ Peru, Ind.; Miami Medical College, Cincinnati, 1896; served for two terms as a member of the school board; on the staff of the Dukes-Miami County Memorial Hospital, where he died January 14, aged 72, of perforated gastric ulcer.

John J. Cavanaugh ✠ Fort Scott, Kan.; John A. Creighton Medical College, Omaha, 1898; died in St. Elizabeth's Hospital, Hutchinson, January 28, aged 76, of coronary thrombosis.

Lee Roy Colby, Norborne, Mo.; Missouri Medical College, St. Louis, 1899; died January 7, aged 87, of cerebral hemorrhage.

Norman V. Collins, Griffin, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1910; died November 24, aged 55.

George Henry Joseph Copia, Chicago; Loyola University School of Medicine, Chicago, 1918; on the staff of St. Bernard's Hospital, where he died January 31, aged 50, of coronary thrombosis and hypertension.

Thomas Benton Cox, Lawndale, Calif.; Baltimore Medical College, 1894; died December 24, aged 77.

George Anderson Crafton, Fulton, Ky.; Vanderbilt University School of Medicine, Nashville, Tenn., 1913; member of the American Medical Association; served during World War I; died December 17, aged 56.

William Clapp Cuthbert ✠ Hudson Falls, N. Y.; Albany Medical College, 1897; for many years coroner of Washington County; health officer of the town of Kingsbury; formerly on the staff of the Glens Falls Hospital, Glens Falls, where he died January 14, aged 71, of coronary thrombosis.

Ernest Napoleon D'Alcorn ✠ Muskegon, Mich.; University of Illinois College of Medicine, Chicago, 1922; fellow of the American College of Surgeons; past president of the Muskegon County Medical Society; on the staff of the Mercy Hospital; interned at the Metropolitan Hospital, Welfare Island, N. Y., and at the Hackley Hospital, at whose school of nursing he lectured and where he was a staff member and where he died January 19, aged 48, of carcinoma of the sigmoid.

Thomas Stevenson Dunning, Philadelphia; Hahnemann Medical College of Philadelphia, 1870; formerly on the staff of the Children's Homeopathic Hospital; on Jan. 10, 1940 had been honored by the Dickinson Club of Philadelphia as the oldest living alumnus of Dickinson College, having graduated in 1867; died January 12, aged 96.

William Murray Edmonds, Tonawanda, N. Y.; University of Buffalo School of Medicine, 1916; served overseas during World War I; for many years member of the board of health; member of the staff of the DeGraff Memorial Hospital, North Tonawanda; died January 11, aged 54, of coronary occlusion, chronic asthma and pulmonary emphysema.

George Potter Edwards, Myrtle Point, Ore.; University of Georgia Medical Department, Augusta, 1902; served as acting assistant surgeon in the U. S. Public Health Service; died in December, aged 76.

Harry Bennett Felts ✠ Salt Lake City; Rush Medical College, Chicago, 1907; also a pharmacist; served during World War I; on the staff of St. Mark's Hospital; died in the Holy Cross Hospital January 14, aged 65, of coronary occlusion.

Edward Newton Flowers, Clarksburg, W. Va.; College of Physicians and Surgeons, Baltimore, 1893; member of the American Medical Association and honorary member of the West Virginia State Medical Association; honorary member and past president of the Harrison County Medical Society; for many years a member of the school board; one of the founders of the Harrison County Hospital, now known as St. Mary's Hospital; died January 25, aged 78, of cerebrovascular arteriosclerosis and bronchopneumonia.

John Albert Flury ✠ St. Louis; Washington University School of Medicine, St. Louis, 1912; served during World War I; formerly on the staff of the Deaconess Hospital; died in Colorado Springs, Colo., January 9, aged 58, of heart disease.

James I. Foster, Huntsville, Tenn.; Tennessee Medical College, Knoxville, 1901; member of the American Medical Association; for many years county health officer; died December 8, aged 69.

Jacob H. Garey, Berlin, Pa.; Jefferson Medical College of Philadelphia, 1885; died in the Somerset Community Hospital, Somerset, November 9, aged 93, of hypertrophy of the prostate and chronic cystitis.

Montgomery G. Gearhart ✠ Millerstown, Pa.; University of the South Medical Department, Sewanee, Tenn., 1901; died January 16, aged 72, of coronary occlusion.

Ludie Thamil Gilmer ✠ Milwaukee; Meharry Medical College, Nashville, Tenn., 1918; died January 12, aged 51, of carcinoma of the stomach.

P. M. Girard, Lafayette, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1882; on the staff of the Lafayette Sanitarium; died December 11, aged 85.

Warren D. Gray, Mason, Tenn.; Memphis Hospital Medical College, 1884; died December 17, aged 79.

James Harry Hendren, Balkan, Ky.; Hospital College of Medicine, Louisville, 1902; served as secretary of the Cumberland Valley Medical Association; died in the Middlesboro Hospital, Middlesboro, December 16, aged 71.

Oscar Henry Henninger, Ironton, Ohio; Pulte Medical College, Homeopathic, Cincinnati, 1909; member of the American Medical Association; for many years a member of the city council; served overseas during World War I; on the staff of the Lawrence County General Hospital; surgeon, Mount Vernon Bridge Company; died December 26, aged 58, of coronary occlusion and chronic myocarditis.

Claiborne Steele Hyland, Yokena, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1894; died in Vicksburg December 22, aged 85.

Jay Arthur Jones, Kansas City, Kan.; College of Physicians and Surgeons, Medical Department, Kansas City University, Kansas City, 1904; member of the American Medical Association; past president and secretary of the Wyandotte County Medical Society; died in the Bethany Hospital December 26, aged 65.

Nathaniel Aloysius Jones, Oklahoma City; Baylor University College of Medicine, Dallas, Texas, 1940; interned at the Toledo Hospital, Toledo, Ohio, and the Brackenridge Hospital, Austin, Texas; reported for active duty as a captain in the medical corps, Army of the United States, on May 14, 1942 and was honorably discharged by reason of physical disqualification on Oct. 3, 1943; died in November, aged 28.

Joseph R. Keller, Sulphur, Okla. (licensed in Oklahoma under the Act of 1908); died November 9, aged 75.

Ellis W. Kelly, Toledo, Ohio; Toledo Medical College, 1897; on the staffs of the Flower Hospital, Women's and Children's Hospital, Toledo Hospital and St. Vincent's Hospital, where he died December 19, aged 76.

Melvin Edwin Koenig, Buffalo; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1931; served an interuship at the Moses Taylor Hospital, Lackawanna, N. Y.; examining physician for the Bethlehem Steel Company; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 25, 1944; received a medical discharge for physical disability on Dec. 4, 1944; died in the Meyer Memorial Hospital December 12, aged 38.

Irving Nelson Kohler, Middleport, N. Y.; University of Buffalo School of Medicine, 1912; member of the American Medical Association; health officer of the town of Hartland; died December 29, aged 69, of coronary occlusion.

Bertram Oliver Kreilick ✠ Fremont, Ohio; Ohio Medical University, Columbus, 1907; for twenty-two years a member and for nineteen years president of the school board; on the staff of the Memorial Hospital, where he died December 30, aged 61, of coronary thrombosis.

John V. Lewis, Momence, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1895; at one time mayor of Momence; died in the Manteno State Hospital, January 3, aged 77, of cerebral anemia and coronary sclerosis.

Irving Phillips Lyon ✠ Buffalo; Johns Hopkins University School of Medicine, Baltimore, 1897; an Affiliate Fellow of the American Medical Association; formerly associate professor of medicine and librarian at the University of Buffalo School of Medicine; member of the American Association of Pathologists and Bacteriologists; served during World War I; for many years on the staff of the Buffalo General Hospital and Buffalo City Hospital; died November 11, aged 74.

William Dunsford Lyon ✠ Andalusia, Ala.; Western Reserve University Medical Department, Cleveland, 1900; specialist certified by the American Board of Pediatrics, Inc.; member of the American Academy of Pediatrics; formerly pediatric consultant to the bureau of maternal and child health of the state department of health; at one time health officer of Grass Lake, Mich., and assistant in pediatrics at the University of Michigan Medical School, Ann Arbor; died in Tucumcari, N. M., December 9, aged 69.

Charles Elmer Magoun, Sioux City, Iowa; Tufts College Medical School, Boston, 1915; member of the American Medical Association; served during World War I; died in Salem, Va., December 18, aged 56.

Benjamin Harry Mann ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1907; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the Association for Research in Ophthalmology, Inc.; fellow of the American College of Surgeons; ophthalmologist at the Methodist Hospital; died in the Graduate Hospital November 22, aged 58.

William Richard McAtee, Erie, Pa.; University of Buffalo School of Medicine, 1930; interned at the Hamot Hospital, where he died November 9, aged 40, of heart disease.

Charles Stanhope Means, Fort Smith, Ark.; University of Arkansas School of Medicine, Little Rock, 1909; member of the American Medical Association; past president of the Sebastian County Medical Society; died November 21, aged 63.

William Alvie Moffitt, Paducah, Ky.; University of Louisville Medical Department, 1903; died in the Riverside Hospital November 25, aged 72, of chronic myocarditis.

Cora Weber Negus, Keswick, Iowa; State University of Iowa College of Medicine, Iowa City, 1906; member of the American Medical Association; died November 14, aged 76.

Isaac Eugene Nervig, Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1902; fellow of the American College of Surgeons; served during World War I; died in Knoxville December 24, aged 70.

John William Noble ✠ Allentown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1919; formerly deputy coroner and medical examiner at induction center; on the staffs of the Allentown and Sacred Heart hospitals; died January 3, aged 49, of uremia and hypertensive vascular disease.

John Coleman O'Gwynn, Mobile, Ala.; University of Tennessee Medical Department, Nashville, 1902; member of the American Medical Association; served during World War I; formerly associated with the U. S. Public Health Service; consultant on the staff of the U. S. Marine Hospital; died January 13, aged 65, of heart disease.

Harold Francis Parker, Waukesha, Wis.; Tufts College Medical School, Boston, 1909; awarded the Purple Heart for wounds received in action during World War I; clinical director of the Veterans Administration Facility; died in the Veterans Administration Facility, Wood, January 13, aged 62, of thrombosis of the left median cerebral artery with right hemiplegia and bulbar paralysis.

Harry Caldwell Parker, Gulfport, Fla.; Harvard Medical School, Boston, 1901; at one time instructor in ophthalmology at the Tufts College Medical School and on the staffs of the Massachusetts Charitable Eye and Ear Infirmary and St. Elizabeth's Hospital, all in Boston; served during World War I; died in the Veterans Administration Facility, Bay Pines, January 11, aged 67, of carcinoma of the left lung.

David H. Parmet ✠ Allentown, Pa.; Jefferson Medical College of Philadelphia, 1909; served as vice president of the Lehigh County Medical Society; on the staff of the Sacred Heart Hospital; died January 4, aged 64, of cerebral hemorrhage.

Frank Herbert Paterson, Santa Ana, Calif.; College of Physicians and Surgeons of San Francisco, 1898; served during World War I; at one time affiliated with the Columbia Hospital in San Jose; died January 3, aged 69, of pneumonia and encephalitic parkinsonism.

Claude Burton Paynter, Salem, Ind.; Louisville (Ky.) Medical College, 1906; member of the American Medical Association; organized the Washington County chapter of the American Red Cross in 1917, serving as its president; a lieutenant in the medical corps, 70th Field Artillery, during World War I; secretary and past president of the Washington County Medical Society; served as county coroner and as city and county health officer; acting surgeon for the Monon Railway Company; died January 8, aged 68, of angina pectoris.

William H. Perry, Flint, Mich.; Homeopathic Medical College of Missouri, St. Louis, 1898; died in the Hurley Hospital January 11, aged 75, of coronary thrombosis.

Alvin August Peterson, Mora, Minn.; Northwestern University Medical School, Chicago, 1916; died January 13, aged 53, of cerebral hemorrhage due to hypertension.

Charles LaFayette Plunkett, New York; Medical College of Virginia, Richmond, 1925; died in a local hospital in November, aged 46.

William H. F. Rhyne, LaFayette, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1891; University of Nashville Medical Department, 1891; died December 1, aged 81.

Joseph Rosenberg, New York; Long Island College Hospital, Brooklyn, 1909; past president of the Harlem Medical Association; formerly on the staffs of the West Side German, Mount Sinai, Lenox Hill, Sydenham, Jewish Memorial and Riker's Island hospitals; for many years director of the Jewish Social Service Association; examining physician for the Merchant Marine Service during World War I; died December 7, aged 68, of leukemia.

Guy Victor Rukke ✠ Colonel, U. S. Army, retired, Monterey, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; Army Medical School, 1907; entered the medical corps of the U. S. Army as a first lieutenant in 1907; promoted to captain in 1910, major in 1916, lieutenant in 1927 and retired with the rank of colonel June 30, 1933 for disability in line of duty; fellow of the American College of Surgeons; died in the Peninsula Community Hospital, Carmel, Calif., Nov. 16, 1943, aged 67.

Shibly Nassif Sallume, Albion, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1907; died in the James W. Sheldon Memorial Hospital January 12, aged 65, of cerebral hemorrhage.

Sarah Elizabeth Anna Schetky, Hood River, Ore.; Woman's Medical College of Pennsylvania, Philadelphia, 1900; died January 3, aged 83, of heart disease.

Jacob Everett Shearer, Phoenix, Ariz.; American Medical College, St. Louis, 1895; served during World War I; formerly health officer of Tillamook County, Ore.; served on the staffs of various Veterans Administration facilities; died December 13, aged 75, of coronary occlusion and arteriosclerosis.

Harlan Daniel Sheldon, Chicago; Bennett Medical College, Chicago, 1910; died February 4, aged 63, of chronic myocarditis and coronary occlusion.

Eugene Pardon Sisson ✠ New Haven, Conn.; Harvard Medical School, Boston, 1918; member of the American Academy of Pediatrics and the Kansas Medical Society; assistant in the department of university health, Yale University; died January 27, aged 51, of purpura hemorrhagica.

Clinton H. Smith, Big Spring, Neb.; Lincoln Medical College, Eclectic, 1910; served as physician for the Union Pacific Railroad for many years; died December 29, aged 61.

Langdon Trufant Snipe ✠ Bath, Maine; College of Physicians and Surgeons, New York, 1893; past president of the Maine Medical Association; on the staff of the Bath Memorial Hospital; served as bank president; died December 13, aged 77, of carcinoma of the sigmoid with metastasis to the liver.

Law Erskine Somers ✠ Fort Wayne, Ind.; Indiana University School of Medicine, Indianapolis, 1917; died January 22, aged 56, of coronary heart disease.

Harold Carold Soucey ✠ Fresno, Calif.; College of Medical Evangelists, Loma Linda and Los Angeles, 1928; died December 25, aged 50.

Annie Whitney Spencer, Batavia, Ill.; the Hahnemann Medical College and Hospital, Chicago, 1896; first woman president of the Illinois Homeopathic Medical Association in 1920; on the staff of the Bellevue Place Sanitarium, where she died December 18, aged 85.

James Malcolm Stallard, Sparta, Ky.; Kentucky School of Medicine, Louisville, 1898; died December 19, aged 74.

Lester Miles Stearns ✠ San Diego, Calif.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; fellow of the American College of Surgeons; at one time instructor of anatomy at his alma mater; formerly on the staff of the Oak Park Hospital, Oak Park, Ill.; associated with the Consolidated Vultee Aircraft Corporation; died in the Scripps Memorial Hospital, La Jolla, January 4, aged 61, of meningitis.

James R. Stodghill, Lineville, Ala.; Southern Medical College, Atlanta, Ga., 1881; also a minister; died in December, aged 88.

Dwight Harold Stoughton ✠ Hartford, Conn.; McGill University Faculty of Medicine, Montreal, Que., 1918; president and treasurer of the D. G. Stoughton Company, operators of drug stores in Hartford and West Hartford; died December 16, aged 52.

Francis Joseph Talbot ✠ Niagara Falls, N. Y.; Baltimore Medical College, 1911; served during World War I; associate Fellow of the American College of Physicians; physician to Niagara University; psychiatrist, State of New York Department of Mental Hygiene; medical director, child welfare, and medical inspector, department of education; member of staffs of the Niagara Falls Memorial and Mount St. Mary's hospitals; medical examiner, Lehigh Valley Railroad; died in St. Joseph's Hospital, Buffalo, November 11, aged 58.

Van der Veer Taylor, Xenia, Ohio; Medical College of Ohio, Cincinnati, 1896; died January 13, aged 78, of cerebral hemorrhage.

William Ellwood Tew ✠ Bessemer, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; for many years a member of the Michigan State Board of Registration in Medicine; served as president of the Upper Peninsula Medical Society; died December 25, aged 64.

Isaac Walton Thorne, San Francisco; Cooper Medical College, San Francisco, 1896; at one time instructor in surgery at his alma mater; member of the American Medical Association; past president and many times a member of the board of directors of the San Francisco County Medical Society; fellow of the American College of Surgeons; for many years chief surgeon at Mary's Help Hospital, where he died December 23, aged 72, of coronary obstruction.

Flora V. Woodward Tibbits, Boyne City, Mich.; the Hahnemann Medical College and Hospital, Chicago, 1906; died in Charlevoix January 4, aged 74, of organic heart disease.

E. A. Titel, Greenleaf, Wis.; Milwaukee Medical College, 1905; member of the American Medical Association; died in St. Vincent's Hospital, Green Bay, December 26, aged 68, of cardiac embolism and coronary sclerosis.

John Van Doorn, Marion, N. Y.; University of Buffalo School of Medicine, 1895; member of the American Medical Association; for many years coroner of Wayne County and health officer of Marion; died in Fairport, January 13, aged 77, of carcinoma of the lung.

Arthur Ward Van Riper ✠ Passaic, N. J.; College of Physicians and Surgeons, New York, 1895; instructor in pediatrics at the New York Post-Graduate Medical School, New York, 1922-1923; for many years associated with the board of health; honorary member of the New Jersey Medical Society; president of the medical staff and senior staff pediatrician at the Passaic General Hospital, where he died December 22, aged 74, of chronic valvular heart disease.

John Asa Walker, Shawnee, Okla.; St. Louis College of Physicians and Surgeons, 1897; member of the American Medical Association and in 1910 member of the House of Delegates; past president of the Pottawatomie County Medical Society and for many years a member of the board of censors; formerly councilor of the Seventh District of the Oklahoma State Medical Association; served during World War I; on the staff of the Shawnee City Hospital; died December 25, aged 78, of intestinal obstruction.

Powhatan M. Waltrip Sr., Fort Worth, Texas; University of Louisville Medical Department, Louisville, Ky., 1898; died in St. Joseph's Hospital December 29, aged 70, of pneumonia and cerebral hemorrhage.

Emil Henry Webster ✠ Sault Ste. Marie, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1890; died January 19, aged 75, of chronic myocarditis and cerebral hemorrhage.

Albert Robert Weinglass, Chicago; University of Illinois College of Medicine, Chicago, 1941; interned at the Epworth Hospital in South Bend, Ind., and the Chicago Memorial Hospital; served an internship and fellowship in metabolism at the Michael Reese Hospital; research fellow in medicine at Harvard Medical School, Boston; teacher at the Thorndike Memorial Laboratory and resident in pathology at the Boston City Hospital, where he died January 3, aged 27, of diabetes mellitus.

Samuel Bernard Weiner ✠ New York; Long Island College of Medicine, Brooklyn, 1934; specialist certified by the American Board of Pediatrics, Inc.; formerly resident in pediatrics at the Strong Memorial Hospital, Rochester, N. Y.; served an internship, a residency in pediatrics and as adjunct pediatrician at the Mount Sinai Hospital, where he died November 22, aged 33.

Hugh Judson Westgate, Rhinelander, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1909; member of the American Medical Association; died January 2, aged 69, of coronary occlusion.

Malcolm Mackenzie Wickware, Detroit; Detroit College of Medicine, 1897; medical director of the Gleaner Life Insurance Society; died in the Highland Park General Hospital, Highland Park, December 9, aged 74.

George Thomas Williams ✠ Crawfordsville, Ind.; Medical College of Indiana, Indianapolis, 1887; served during World War I; member of the medical staff of Culver Hospital, where he died, December 20, aged 79, of cerebral hemorrhage due to cardiorenal vascular disease.

Edwin G. Wilson, Jackson, Mich.; Michigan College of Medicine and Surgery, Detroit, 1903; member of the American Medical Association; died in New Port Richey, Fla., January 12, aged 67, of acute left ventricular cardiac failure and coronary thrombosis.

Adelaide Woodard, Seattle; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1902; for her many years of service as a medical missionary in India was decorated by King George V of England; died January 7, aged 70.

Charles Edward Wright, Clear Lake, Iowa; State University of Iowa College of Medicine, Iowa City, 1898; member of the American Medical Association; died in Rose Hill December 21, aged 83, of carcinoma of the stomach.

Anna Rand Young, Stamford, Conn.; Tufts College Medical School, Boston, 1905; contract surgeon in the Office of the Surgeon General at Washington and director of U. S. Army laboratory technicians during World War I; died in the Stamford Hospital January 7, aged 70, of coronary disease.

Bureau of Investigation

BACKWARD GOES "SERUTAN"

Federal Trade Commission Calls Halt on the Advertising Claims

If you read it backward, "Serutan" is "Nature's"; its promoters apparently would have you believe that it is nature's way of curing constipation, giving you new life and "pep." Since 1935, and perhaps longer, Serutan has, in a manner of speaking, been getting into the public's hair, and perhaps, in a good many instances, also into its stomach and intestine.

An early advertising circular claimed: "Serutan is approved by such eminent authorities as . . . Victor H. Lindlahr." A picture of Lindlahr was associated with the somewhat amazing statement: "Eighteen years of study and investigation in the problems of health and disease give him a background which makes him peculiarly adapted for the great service he is now rendering countless thousands by his daily radio message on healthful living."

Where did Victor H. Lindlahr put in his "eighteen years of study and investigation in the problems of health and disease"? A search through the American Medical Association's exhaustive biographic records fails to show that he ever obtained a license to practice medicine in any state in the Union. The now defunct St. Louis College of Physicians and Surgeons reported him as one of its graduates in the class of 1917, though a picture of the class of 1923 included a person designated as "V. H. Lindlahr"! Regardless of which date is correct, his diploma from that school is no credit to him; the institution had an unsavory reputation long before it figured in the "diploma mill" scandal of 1923, after which its charter was revoked.

The records further show that the Chicago College of Osteopathy bestowed a diploma on Lindlahr in 1918 and that the state of Illinois granted him a license to practice osteopathy in the same year. As a dabbler in another field of "science" he obtained a license to practice "natureopathy" in Connecticut in 1931, but less than a year afterward that state revoked the license when the attorney general ruled that Lindlahr had not fulfilled the educational requirements for such license.

Some of Lindlahr's advertising that circulated in 1932 declared: "He was for six years chief of staff of the Lindlahr Sanitarium and is recognized as one of America's leading drugless physicians." Recognized by whom?

Besides the so-called Lindlahr Sanitarium, there was the high-sounding "Lindlahr College of Natural Therapeutics." These schools appear to have been devoted to a variety of medical fads and were shepherded largely by Victor's father, Henry Lindlahr, M.D., possessor of a diploma from a "medical university" of dubious standing. After the father's death in 1924 the institutions were sold. The records indicate that for a time Victor remained in Chicago, giving "health lectures" and running a "health food" store and restaurant in Chicago. The scene next shifted to New York, where Victor took up the promotion of "patent medicines," apparently beginning with "Edrolax" and going on to "Kal," which was advertised as a calcium accessory to the diet. The government ruled that Kal was sold under fraudulent claims. Then Lindlahr found other nostrums to boost, such as "Hood-Lax" and "Serutan."

In New York Lindlahr also extended his "medical" activities to the literary field. First, it seems, he was president of a concern known as Lindlahr's Magazine, Inc. In 1932, the records indicate, the name was changed to Modern Living, Inc. This concern published a health-fad magazine, *Modern Living*, which Lindlahr was said to have edited until he organized another one of like nature, called the *Journal of Living*.

According to the Federal Trade Commission, Lindlahr has been employed by Healthaids, Inc., Jersey City, N. J., present manufacturer and distributor of Serutan, as a "health lecturer," actively promoting the sale of this nostrum to the public and receiving compensation from the company and the Journal of Living Publishing Corporation. Further, the Commission reported that Lindlahr is a director of the publishing concern, as are also two other persons, who are officers of the Healthaids outfit.

In October 1940 the Commission issued a complaint against Healthaids, Inc., the *Journal of Living* and its editor, Victor H. Lindlahr, for making misrepresentations for Serutan through advertisements in newspapers, periodicals, circulars and radio broadcasts.

In their reply the respondents denied that they had made the misrepresentations charged against them or that Lindlahr directs and controls the practices of Healthaids, Inc., and the Journal of Living Publishing Corporation with respect to the advertising of its preparations or otherwise, or that the respondents had acted in conjunction and cooperation with each other in carrying out the practices alleged in the complaint.

The case was submitted to hearings held intermittently over a period of years. Now it seems to have reached its conclusion in a Cease and Desist Order issued in January 1945 by the Commission. This directs the respondents to stop disseminating "any advertisement which represents directly or indirectly that Serutan (1) is a cure or remedy for constipation, will restore or maintain natural elimination, will promote normal or regular action by the digestive or eliminative organs or muscles, or has any therapeutic value in the treatment of constipation in excess of the temporary relief afforded by its laxative action; (2) will strengthen the digestive or eliminative organs or muscles; or (3) will stimulate the digestive or eliminative organs or muscles. (This last prohibition is not to be construed as prohibiting representations that Serutan tends to stimulate peristaltic action by the intestines.)"

With these misrepresentations barred from the advertising, how will the promoters of Serutan be able to sell enough to make it profitable? The Commission's order brought out the information that the nostrum consists of equal parts of rice polishings and the epithelial tissue of psyllium seed. Instead of its being a cure for constipation, its therapeutic value is "limited to the temporary relief afforded by its laxative action. . . . When taken as directed, Serutan acts as a mild irritant, bulk laxative. . . . A small portion of the indigestible residues of Serutan is broken down into volatile fatty acids which irritate the intestinal walls. The crude fibers contained in the rice polishings also have a direct irritant effect upon the intestinal walls. . . ."

This case is not the first action that the Federal Trade Commission has brought against Lindlahr and the Journal of Living Publishing Corporation. In 1943 it ordered them and Purity Products, Inc., distributors, to cease disseminating any advertisement which represented, among other things, that the product "V-Bev" had any value in the treatment of arthritis, nervousness, indigestion, sleeplessness, lack of energy, underweight or general run-down condition, or of any disease or condition caused by or associated with a vitamin B_1 deficiency.

Healthaids, Inc., individually, had a run-in with the Food and Drug Administration in 1934, when the latter seized an interstate shipment of the firm's "Lax-Aid" on the charge that the labels falsely represented, among other things, that this was not a seed product, whereas analysis had shown it to consist essentially of ground plantago seeds. Further, the government charged that the label fraudulently represented that the nostrum, by doing away with constipation, would thereby remove the cause of rheumatism, pyorrhea, diseased tonsils, colitis and "many other life-taking diseases." Healthaids, Inc., put up no defense in this case.

The airing of the decision in the Serutan case may cause many of the public to speculate as to how much they can believe of medical claims made over the radio. Nostrum promotion in newspaper and magazine advertising columns in the past has been flagrant; much of it still is. Over the radio the public today often hears the most preposterous claims in the field of medication, presented by the seductive voices of those who pretend to speak with authority. The owners of Serutan sponsored a widely known newspaper columnist and radio commentator named Drew Pearson. Persons who cherish respectability should be expected to assure themselves of the reliability of their sponsorship, particularly when the health of the people is so directly concerned. Mr. Pearson so persistently refuses to correct misstatements of fact related to medicine when made in his newspaper column that it would apparently be futile to expect him to comment on the present state of knowledge regarding his former sponsor on the radio.

Correspondence

SUMMARY AND CONCLUSIONS

To the Editor:—This communication is to protest against a growing tendency among medical authors publishing papers in certain journals to append an incomplete table of contents and label it Summary and Conclusions. Thus:

1. The literature covering the important subject of whether two and two make four is thoroughly reviewed.
2. Certain evidence more or less bearing on this important subject is presented.
3. The significance of these findings is discussed.
4. Read it, you — —.

The journals published by the American Medical Association do not offend in this way and I know your teaching has been against it.

Yours for better summaries and conclusions.

TASKER HOWARD, M.D., Brooklyn.

ANTIMONY THERAPY IN CREEPING ERUPTION

To the Editor:—Dr. Dudley C. Smith's article in THE JOURNAL, Nov. 13, 1943, page 694, hardly called for a reply, as the literature to which he referred obviously was a limited one; but, as the article has given rise to the claim that antimony products other than fuadin have proved unsuccessful in the treatment of creeping eruption, may I refer you to early reports on their use appearing in various quarters and prompting my own warning, to which he referred, that not all cases respond to antimony therapy and may therefore not have the same causative organism:

Cawston F. Gordon: *J. Roy. Army M. Corps*, December 1929.
Cawston, F. Gordon: *J. Trop. Med. & Hyg.*, Aug. 15, 1928, pp. 209, 210.

F. G. CAWSTON, Durban, South Africa.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Injury to Anesthetized Patient; Application of the Doctrine of Res Ipsa Loquitur.—The patient submitted to an appendectomy on Oct. 28, 1939 at a hospital owned by Dr. Swift. After he was wheeled to the operating room, according to the plaintiff, the anesthetist pulled his body to the head of the operating table, laying him back against two hard objects at the top of his shoulders, about an inch below his neck. The patient was then anesthetized and lost consciousness. When he came out of the anesthetic the following morning he felt a sharp pain about half way between his neck and his right shoulder, and diathermy treatments were given him for this pain while he remained in the hospital. The pain did not subside but spread down to the lower part of his arm, growing worse after his release from the hospital. He was unable to rotate or lift his arm and developed paralysis and atrophy of the muscles around his shoulder. According to another physician who subsequently treated him for this ailment, roentgenograms indicated an area of diminished sensation below the shoulder and atrophy and wasting away of muscles around the shoulder and, in the opinion of this physician, the patient's condition was due to trauma or injury by pressure or strain applied between his right shoulder and neck. Another physician, who had examined the patient probably for the purpose of testifying, testified that the patient's injury was a paralysis of traumatic origin, not arising from pathologic causes and not systemic, and that the injury resulted in atrophy, loss of use and restriction of motion of the right arm and shoulder. Subsequently the patient brought suit against the operating physician, the anesthetist, the physician who owned the hospital at which the operation was performed, and the special nurse who attended him. At the conclusion of the evidence the trial court entered a nonsuit as to all the defendants, and the patient appealed eventually to the Supreme Court of California.

The patient contended that the evidence adduced by him at the trial court, substantially as stated, presented a proper case for the application of the doctrine of res ipsa loquitur and that the inference of negligence arising from the application of that doctrine made the entering of a nonsuit improper. The defendants, however, argued that, assuming the patient's condition was in fact the result of injury, there was no showing that the act of any particular defendant, or any particular instrumentality, was the cause thereof. Briefly stated, they defended on two theories: (1) that where there are several defendants and there is a division of responsibility in the use of an instrumentality causing the injury, and the injury might have resulted from the separate act of either one of two or more persons, the rule of res ipsa loquitur cannot be invoked against any one of them; and (2) that where there are several instrumentalities, and no showing is made as to which caused the injury or as to the particular defendant in control of it, the doctrine cannot apply. The doctrine of res ipsa loquitur, said the court, has three conditions: "(1) The accident must be of a kind which ordinarily does not occur in the absence of some one's negligence; (2) it must be caused by an agency or instrumentality within the exclusive control of the defendants; (3) it must not have been due to any voluntary action or contribution on the part of the plaintiff." Prosser, Torts, p. 295. It is applied in a wide variety of situations, including cases of medical or dental treatment and hospital care. There is, however, some uncertainty as to the extent to which the doctrine may be invoked in cases of injury from medical treatment. This is in part due to the tendency in some decisions to lay undue emphasis on the limitations of the doctrine and to give too little attention to its basic underlying purpose. The result has been that a simple, understandable rule of circumstantial evidence, with a sound background of common sense and human experience, has occasionally been transformed into a rigid legal formula, which arbitrarily precludes its application in many cases in which it is most important that it should be applied. If the doctrine is to continue to serve a useful purpose, we should not forget that "the particular force and justice of the rule, regarded as a presumption throwing upon the party charged the duty of producing evidence, consists in the circumstance that the chief evidence of the true cause, whether culpable or innocent, is practically accessible to him but inaccessible to the injured person." 9 Wigmore, Evidence, ed. 3, sec. 2509, p. 382; see also *Whetstine* v. *Moravec*, 228 Iowa 352, 291 N. W. 425; *Ross* v. *Double Shoals Cotton Mills*, 140 N. C. 115, 52 S. E. 121, 1 L. R. A., N. S., 298; *Maki* v. *Murray Hospital*, 91 Mont. 251, 7 P. (2d) 228. In the Maki case, in which an unconscious patient in a hospital received injuries from a fall, the court declared that without the doctrine the maxim that for every wrong there is a remedy would be rendered nugatory "by denying one, patently entitled to damages, satisfaction merely because he is ignorant of facts peculiarly within the knowledge of the party who should, in all justice, pay them."

The present case, continued the court, is of a type that comes within the reason and spirit of the doctrine more fully perhaps than any other. The passenger sitting awake in a railroad car at the time of a collision, the pedestrian walking along the street and struck by a falling object or the débris of an explosion, are surely not more entitled to an explanation than the unconscious patient on the operating table. Viewed from this aspect, it is difficult to see how the doctrine can, with any justification, be so restricted in its statement as to become inapplicable to a patient who submits himself to the care and custody of doctors and nurses, is rendered unconscious and receives some injury from instrumentalities used in his treatment. Without the aid of the doctrine a patient who received permanent injuries of a serious character, obviously the result of some one's negligence, would be entirely unable to recover unless the doctors and nurses in attendance voluntarily chose to disclose the identity of the negligent person and the facts establishing liability. See

Maki v. *Murray Hospital*, 91 Mont. 251, 7 P. (2d) 228. If this were the state of the law of negligence, the courts, to avoid gross injustice, would be forced to invoke the principles of absolute liability, irrespective of negligence, in actions by persons suffering injuries during the course of treatment under anesthesia. But we think this juncture has not yet been reached and that the doctrine of res ipsa loquitur is properly applicable to the case before us. The condition that the injury must not have been due to the plaintiff's voluntary action is of course fully satisfied under the evidence produced herein; and the same is true of the condition that the accident must be one which ordinarily does not occur unless some one was negligent. We have here no problem of negligence in treatment, but of distinct injury to a healthy part of the body not the subject of treatment, nor within the area covered by the operation. The decisions in this state make it clear that such circumstances raise the inference of negligence and call on the defendant to explain the unusual result. See *Ales* v. *Ryan*, 8 Cal. (2d) 82, 64 P. (2d) 409; *Brown* v. *Shortlidge*, 98 Cal. App. 352, 277 P. 134.

The argument of defendants, said the court, is simply that plaintiff has not shown an injury caused by an instrumentality under a defendant's control, because he has not shown which of the several instrumentalities that he came in contact with while in the hospital caused the injury; and he has not shown that any one defendant or his servants had exclusive control over any particular instrumentality. The defendants asserted that some of them were not the employees of other defendants, that some did not stand in any permanent relationship from which liability in tort would follow and that, in view of the nature of the injury, the number of defendants and the different functions performed by each, they could not all be liable for the wrong, if any. We have no doubt, answered the court, that in a modern hospital a patient is quite likely to come under the care of a number of persons in different types of contractual and other relationships with each other. For example, in the present case it appears that Drs. Smith, Spangard and Tilley were physicians or surgeons commonly placed in the legal category of independent contractors; and Dr. Reser, the anesthetist, and the defendant Thompson, the special nurse, were employees of Dr. Swift and not of the other doctors. But we do not believe that either the number or the relationship of the defendants alone determines whether the doctrine of res ipsa loquitur applies. Every defendant in whose custody the plaintiff was placed for any period was bound to exercise ordinary care to see that no unnecessary harm came to him, and each would be liable for failure in this regard. Any defendant who negligently injured him, and any defendant charged with his care who so neglected him as to allow injury to occur, would be liable. The defendant employers would be liable for the neglect of their employees; and the physician in charge of the operation would be liable for the negligence of those who became his temporary servants for the purpose of assisting in the operation. In this connection, continued the court, it should be noted that, while the assisting physicians and nurses may be employed by the hospital or engaged by the patient, they normally become the temporary servants or agents of the surgeon in charge while the operation is in progress, and liability may be imposed on him for their negligent acts under the doctrine of respondeat superior. Thus a surgeon has been held liable for the negligence of an assisting nurse who leaves a sponge or other object inside a patient, and the fact that the duty of seeing that such mistakes do not occur is delegated to others does not absolve the doctor from responsibility for their negligence. See *Ales* v. *Ryan*, 8 Cal. (2d) 82, 64 P. (2d) 409; *Armstrong* v. *Wallace*, 8 Cal. App. (2d) 429, 47 P. (2d) 740; *Ault* v. *Hall*, 119 Ohio St. 422, 164 N. E. 518, 60 A. L. R. 128; and see also *Maki* v. *Murray Hospital*, 91 Mont. 251, 7 P. (2d) 228. It may appear at the trial that, consistent with the principles outlined, one or more defendants will be found liable and others absolved, but this should not preclude the application of the rule of res ipsa loquitur. The control at one time or another of one or more of the various agencies or instrumentalities which might have harmed the plaintiff was in the hands of every defendant or of his employees or temporary servants. This, we think, places on them the burden of initial explanation. The plaintiff was rendered unconscious for the purpose of undergoing surgical treatment by the defendants; it is manifestly unreasonable for them to insist that he identify any one of them as the person who did the alleged negligent act.

The other aspect of the case, continued the court, that the defendants so strongly emphasize is that the plaintiff has not identified the instrumentality any more than he has the particular guilty defendant. Here again there is a misconception, which, if carried to the extreme for which the defendants contend, would unreasonably limit the application of the res ipsa loquitur rule. It should be enough that the plaintiff can show an injury resulting from an external force applied while he lay unconscious in the hospital; this is as clear a case of identification of the instrumentality as the plaintiff may ever be able to make. Under the present facts there can be no justification for the rejection of the doctrine of res ipsa loquitur. If we accept the contention of the defendants there will rarely be any compensation for patients injured while unconscious. A hospital today conducts a highly integrated system of activities, with many persons contributing their efforts; e. g., preparation for surgery by nurses and interns who are employees of the hospital; administering of an anesthetic by a physician who may be an employee of the hospital, an employee of the operating surgeon or an independent contractor; performance of an operation by a surgeon and assistants who may be his employees, employees of the hospital or independent contractors; and post-surgical care by the surgeon, a hospital physician and nurses. The number of those in whose care the patient is placed is not a good reason for denying him all reasonable opportunity to recover for negligent harm. It is rather a good reason for reexamination of the statement of legal theories which supposedly compel such a shocking result. We do not at this time undertake to state the extent to which the reasoning of this case may be applied to other situations in which the doctrine of res ipsa loquitur is invoked. We merely hold that, where a plaintiff receives unusual injuries while unconscious and in the course of medical treatment, all those defendants who had any control over his body or the instrumentalities which might have caused the injuries may properly be called on to meet the inference of negligence by giving an explanation of their conduct.

Accordingly, the judgment of nonsuit in favor of all the defendants was reversed.—*Ybarra v. Spangard, 154 P. (2d) 687 (Calif., 1944).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, March 17, page. 673.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Part III. Various centers, June. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF INTERNAL MEDICINE: *Written*. Oct. 15. Final date for filing application is Aug. 1. Candidates in the armed forces may take the examination at their station with the permission of their medical commanding officer. Asst. Sec., Dr. W. A. Werrell, 1301 University Ave., Madison 5, Wis.

AMERICAN BOARD OF OBSTETRICS & GYNECOLOGY: *Part II. Oral.* Atlantic City, June 13-19. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: New York, June 13-16; Chicago, Oct. 4-6; and Los Angeles, January. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part I. Oral and Written.* New Orleans, Sept. 28-29, New York, Oct. 5-6, Chicago, Oct. 12-13 and San Francisco, Oct. 19-20. Final date for filing application is August 1. Sec., Dr. G. A. Caldwell, 3503 Prytania St., New Orleans 15.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Oct. 3-6. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF RADIOLOGY: *Oral.* New York, June 3. Final date for filing application is May 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF UROLOGY: *Written.* Chicago, Dec. 9. *Oral.* Chicago, Feb. 19-22. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

28:689-842 (Dec.) 1944

Syncope Associated with Exertional Dyspnea and Angina Pectoris. A. Golden.—p. 689.

*Suggestion for Improving Structure of Cardiac Coronary Circulatory System Without Surgical Intervention. J. A. Amadeo.—p. 699.

Cardiac Hypertrophy of Unknown Cause: Study of Clinical and Pathologic Features in 10 Adults. R. L. Levy and W. C. Von Glahn.—p. 714.

Unusual Conditions Involving Abdominal Aorta: 7 Cases with Autopsy Observations. N. E. Reich.—p. 742.

Effects of Emetine on Electrocardiogram. M. Hardgrove and E. R. Smith.—p. 752.

*Increased Capillary Fragility in Hypertension: Incidence, Complications and Treatment. J. Q. Griffith Jr. and M. A. Lindauer.—p. 758.

Blood Pressure in Arm and Thigh of Man: I. Study of Averages, Variations and Differences Between Thigh and Arm. E. E. Gambill and E. A. Hines Jr.—p. 763.

Id.: II. Hydrostatic Influences. E. E. Gambill and E. A. Hines Jr.—p. 773.

Id.: III. Effect of Venous Engorgement. E. E. Gambill and E. A. Hines Jr.—p. 777.

Id.: IV. Blood Pressure in Exercised Extremities. E. E. Gambill and E. A. Hines Jr.—p. 782.

Effect of Renal Vein Occlusion on Blood Pressure of Dog. Louise Friedberg.—p. 786.

Momentary Atrial Electrical Axes: I. Normal Sinus Rhythm. G. M. Decherd and A. Ruskin.—p. 794.

Improving the Coronary Circulation.—Among the poor in the rural mountainous sections of Puerto Rico Amadeo observed a high incidence of anemia due to Uncinaria and to protein deficiencies in the diet. These anemic peasants walked several miles up and down hill with great ease. It seemed impossible for any heart to stand the enormous double strain of severe anemia and violent exercise. Furthermore, among 1,565 white poor patients over 45 years of age from these rural areas observed in his general medical practice during four years there was not a single case of angina pectoris due to coronary disease, whereas among 453 white well-to-do patients over 45 observed during the same four years there were five deaths from coronary disease. The two groups belong to the same race (white Puerto Ricans) and live in the same geographic environment (1,500 to 2,500 feet above the sea level). They differ only in the uncinariasis (ancylostomiasis) and anemia. Observations, and particularly a search for hemic murmurs, convinced the author that the hearts of the poor peasants compensate and preserve functional efficiency in the presence of anemia without weakening, dilating or developing hemic murmurs. The author suggests that moderate, temporary anemia may exert a beneficial effect on the heart by compelling it to develop some compensatory mechanism that continues to function throughout life and allows the heart to tolerate the myocardial anoxia that develops from subsequent anemias, as well as from exertion or coronary sclerosis.

Increased Capillary Fragility in Hypertension.—Griffith and Lindauer measured the capillary fragility by means of the petechial index of Göthlin in patients with hypertension. They found that capillary fragility was increased in about 18 per cent of 265 cases of hypertension. Persons with increased capillary fragility were especially predisposed to apoplexy, retinal hemorrhage and death. Thiocyanate increased an abnormal fragility already present and in certain cases caused an increase in a normal fragility. When this occurs, thiocyanate may be a factor in the causation of apoplexy and other hemorrhagic phenomena. Hesperidin and hesperidin methyl chalcone restored increased capillary fragility to normal in about 84 per cent of cases. These drugs may reduce the frequency of the complications of increased capillary fragility. Thiocyanate should not be given to persons with increased capillary fragility until that fragility has become normal as the result of treatment.

American J. Digestive Diseases, Fort Wayne, Ind.

12:1-32 (Jan.) 1945

Fasting Blood Sample Procedure in Differential Diagnosis and Management of Hepatic Disease. D. Schwimmer, S. D. Klotz, I. J. Drekter and T. H. McGavack.—p. 1.

Hydrochloric Acid Therapy in Achlorhydria. E. Frankel.—p. 15.

Gastrointestinal Allergy. L. Pelner.—p. 17.

Vitamin E vs. Wheat Germ Oil. E. Levin.—p. 20.

Failure of Intestinal Bacteriostasis Following Administration of Pectin to the Rat. B. H. Ershoff and H. B. McWilliams.—p. 21.

Advantages and Disadvantages of Old and Newer Insulins. L. Bauman.—p. 23.

American Journal of Diseases of Children, Chicago

68:369-454 (Dec.) 1944

*Salicylate Intoxication: Studies on Effects of Sodium Salicylate on Prothrombin Time and Alkali Reserve. Gladys J. Fashena and J. N. Walker.—p. 369.

Oxyuriasis: Clinical Survey of 200 Consecutive Cases of Infection with Enterobius Vermicularis in Children. J. F. Miller and N. H. Einhorn.—p. 376.

Generalized Cutaneous Monilial Infection. A. Strickler.—p. 382.

*Primary Tuberculosis: Effect of Unrestricted Activity on Prognosis. M. I. Levine.—p. 385.

Illness History and Physical Growth: II. Comparative Study of Rate of Growth of Preschool Children of Five Health Classes. Mary Elizabeth Evans.—p. 390.

Salicylate Intoxication.—Fashena and Walker report the occurrence of salicylate poisoning during the treatment (by the Coburn method) of a patient with acute rheumatic fever. After the acute rheumatic fever had been diagnosed, the patient, a Negro boy aged 9 years, was given 6 Gm. of sodium salicylate daily. After four days of this treatment all evidence of involvement of the joints had disappeared, but when administration of the drug was stopped pain appeared in both shoulders and in the joint of the right elbow. Four days later, administration of sodium salicylate in oral doses of 8 Gm. a day was resumed, with prompt disappearance of the symptoms in the joints. After forty-eight hours of drug therapy at this higher level the patient developed hyperpnea. Nausea and vomiting appeared on the third day of therapy at the higher level, and disorientation and hallucinations supervened on the sixth day. On the seventh day the patient appeared gravely ill. The hyperpnea showed no response to oxygen or to change in posture. Examination of the blood revealed hypoprothrombinemia, which was partially controlled by daily parenteral doses of 1 mg. of synthetic vitamin K. The authors report experimental studies on the blood salicyl level in 6 children. To achieve blood salicyl levels of the order of 350 micrograms per cubic centimeter, sodium salicylate has to be administered in amounts which border on toxic doses for children. Evidence suggests that after an initial twenty-four hour period of large doses the amount given may be reduced without subsequent diminution in blood salicyl level. It is desirable that the Coburn treatment for rheumatic fever be controlled by repeated estimations of the blood salicyl level in order to attain maximum therapeutic effectiveness with minimal doses. Sodium salicylate regularly induces hypoprothrombinemia, which may regress spontaneously as treatment continues. Large doses of vitamin K appear to prevent the development of prothrombin deficiency and to hasten its restoration to normal levels when the deficiency is already present. Sodium salicylate as well as other compounds of salicylic acid should be administered to children with due regard for the hypoprothrombinemia and the acid-base changes which they may produce without overt signs. The concomitant administration of vitamin K is indicated.

Unrestricted Activity in Primary Tuberculosis.—Levine reviews data that were accumulated during an investigation on tuberculosis in childhood, carried on from 1926 to 1942 in New York City. Ninety infants were observed before, during and after their primary complex. Twenty-seven of these had the primary pulmonary lesion with perifocal infiltration and went through the active phase of primary complex before they were 12 months of age. These infants were classified as nonambulatory; 16 of them died from tuberculosis and 1 had tuber-

culosis of the hip. All except 3 of the 63 remaining infants were ambulatory throughout the primary complex in spite of the size of the pulmonary infiltration. Of these 60 ambulatory patients only 4 died from tuberculosis and only 2 had complications—tuberculosis of the cervical nodes in 1 instance and multiple hematogenous lesions in the other. Of the 3 hospitalized patients 1 died from tuberculosis and 1 had tuberculosis of the spine. Rest in bed did not influence the course of the primary complex or reduce the incidence of complications, nor was there evidence that lack of rest in bed was detrimental. The age of the child at the time of infection rather than the method of treatment seems to be the important factor in determining prognosis. Contact with a tuberculous mother during the first year was much more dangerous than contact with a tuberculous father. Rest in bed during a primary infection with tuberculosis should be limited only to the period of elevation of temperature, as in the treatment of any febrile condition during childhood.

Archives of Surgery, Chicago

49:367-436 (Dec.) 1944

Wounds of Chest in Pacific Jungle Warfare: Review of 32 Cases. H. G. Hardt Jr.—p. 367.
Laboratory Course in Thoracic Surgery: Exercises in Performance of Surgical Procedures on Thorax, with Discussion of Their Clinical Applications. E. Holman and W. L. Rogers.—p. 373.
*Paralysis of Larynx: Early Sign of Recurrence Following Radical Mastectomy for Carcinoma, with Report of 6 Cases. J. R. Fox.—p. 388.
Complete Rupture of Supraspinatus Tendon: Simplified Operative Repair. L. Jones.—p. 390.
Progress in Orthopedic Surgery for 1943: XVI. Conditions Involving Lower Part of Back. H. H. Kuhn.—p. 399.
Id: XVII. Infections of Bones and Joints. P. C. Colonna.—p. 402.
Review of Urologic Surgery. A. J. Scholl and others.—p. 415.

Paralysis of Larynx After Carcinoma of Breast.—Fox reports 6 cases of surgically treated cancer of the breast in which a period of complete symptomatic freedom from disease followed mastectomy. This period varied from fourteen months to twelve years. The patient's well-being was then suddenly interrupted by changes in the voice, described as persistent hoarseness or huskiness. There were also intermittent weakness of the voice, a tendency for the voice to crack and a nonproductive cough, unaccompanied by evidence of infection of the respiratory tract. Dyspnea was severe in 1 patient and was experienced on exertion by the others. In each instance it was the laryngeal disturbance which caused the patient to consult her physician. Hoarseness occurring after radical mastectomy for carcinoma of the breast is often the first clinical evidence of metastasis. Metastasis from carcinoma of the breast causes paralysis of the recurrent laryngeal nerve on the same or on the opposite side by involving the chain of lymph nodes surrounding the recurrent laryngeal nerve.

Connecticut State Medical Journal, Hartford

9:1-78 (Jan.) 1945

Recent Advances in Treatment of Heart Disease. L. H. Nahum and S. D. Doff.—p. 3.
School Health Problems as Seen in Pediatric Clinic. G. F. Powers.—p. 11.
Methods of Evaluating School Health Programs. M. Derryberry.—p. 19.
Metastatic Malignancy Treated by Radical Methods. E. L. Lawrence.—p. 23.
Narcotherapy in Hysterical Reactions: Intravenous Use of 2.5 per cent Pentothal Sodium Solution. L. H. Gold.—p. 24.
Pilonidal Cyst: Report of 6 Cases and Comment on Treatment by Injection. D. J. Knowlton.—p. 28.
Psychiatric Problems of Returning Soldier and Their Medical Management. W. B. Terhune.—p. 29.

Minnesota Medicine, St. Paul

28:1-88 (Jan.) 1945

Preoperative and Postoperative Management of Poor Risk Infant or Child. E. S. Platou.—p. 29.
Preoperative and Postoperative Care of Aged Surgical Patients. O. I. Sohlberg.—p. 32.
Preoperative and Postoperative Care of Bad Risk Patient. R. W. McNealy.—p. 34.
Malignant Growths of Mastoid Process and Middle Ear. F. A. Figi and B. E. Hempstead.—p. 38.
Virus Pneumonia: Résumé and Therapeutic Suggestion. H. J. Wolff.—p. 43.
Varicose Ulcers: Study of 143 Cases. C. L. Holmes and F. L. Smith.—p. 46

New Orleans Medical and Surgical Journal

97:291-334 (Jan.) 1945

Diagnostic and Therapeutic Possibilities of Bronchoscopy. G. J. Taquino.—p. 291.
Carcinoma of Larynx. F. E. LeJeune.—p. 298.
Role of Roentgen Pelvimetry in Management of Pelvic Contradiction. E. L. King.—p. 302.
Causes of Syncope with Special Reference to Heart. W. A. Sodeman and H. T. Englehardt.—p. 307.
Dissecting Aneurysm of Aorta in Boy. J. W. McLaurin.—p. 317.
What Makes Medicine Psychosomatic? S. Nelken.—p. 319.
Intestinal Obstruction Following Use of Cotton: Case Report. V. D'Ingianni.—p. 322.

Physiological Reviews, Baltimore

25:1-202 (Jan.) 1945

Effects of Oxygen at Increased Pressure. J. W. Bean.—p. 1.
*Certain Animal Venoms and Their Physiologic Action. H. E. Essex.—p. 148.
Neurosecretion. E. Scharrer and B. Scharrer.—p. 171.
Inorganic Industrial Hazards. L. T. Fairhall.—p. 182.

Animal Venoms.—Essex discusses the effects of bee stings and also bee venom as a therapeutic agent and considers in turn scorpions, spiders and finally reptiles, particularly snakes. Discussing these poisonous animals and their venoms, he considers the chemistry, pharmacology, symptomatology, pathology, treatment and immunity and also the use of the poisons as therapeutic agents.

Review of Gastroenterology, New York

11:381-439 (Nov.-Dec.) 1944

*Hepatotoxic Effects Following Occupational Exposure to Halowax (Chlorinated Hydrocarbons). N. Strauss.—p. 381.
Digestive Disturbances of Negro Soldier as Seen in Large Army General Hospital. A. A. Kirchner.—p. 397.
Spontaneous Internal Biliary Fistulas: Case Report of Perforation of Gallbladder into the Stomach. A. Slanger.—p. 409.
Regional Ileitis or Enteritis. L. Pelner.—p. 412.

Hepatotoxic Effects of Chlorinated Hydrocarbons.—A man aged 50, while working in a defense plant, had been exposed to the fumes of Halowax, a chlorinated hydrocarbon. After three months of exposure he developed a Halowax dermatitis and three months later, that is, six months after exposure to the fumes, he became jaundiced and was hospitalized. He died two months later. The cause of death was cirrhosis of the liver due to subacute necrotizing hepatitis (acute yellow atrophy of the liver). This case led to an investigation of the literature on the toxic effects of exposure to the various chlorinated hydrocarbons. Strauss discusses animal experiments and reviews Drinker's observations on 3 workers of the Halowax Corporation who died of jaundice following exposure to Halowax. He cites a report by Greenburg and his associates of 3 workers dying of acute yellow atrophy following occupational exposure to chlorinated naphthalenes. He also cites a nonfatal case of poisoning by chlorinated naphthalenes. The clinical histories of 5 patients with a history of exposure to the fumes of chlorinated hydrocarbons are presented. All showed a drop in the serum albumin and total proteins. The author stresses that if a worker develops jaundice or Halowax dermatitis he should be immediately removed from possible contact with the vapors of the chlorinated hydrocarbons. He should be placed on a high protein diet and given several transfusions of either whole blood or plasma. He should never be permitted to return to the same occupation or to one that subjects him to the inhalation of carbon tetrachloride or its allied compounds.

Union Médicale du Canada, Montreal

74:1-136 (Jan.) 1945

Hematemesis Without Ulcerous or Cancerous Involvement of the Gastroduodenal Mucosa. R. Boucher.—p. 2.
Endometriosis. L. Gerin-Lajoie.—p. 13.
Industrial Accidents and Syphilis. A. Marin.—p. 18.
Pneumococcic Meningitis Cured by Penicillin. R. Amyot.—p. 21.
Ludwig's Angina: Case. V. Latraverse.—p. 28.
Terebrating Ecthyma of Scrofulous Patient: Rare Form of Tuberculid. P. Poirier.—p. 32.
Infarction of Myocardium: Consideration of Case. A. Pager and M. Papineau.—p. 34.
Hormonal Treatment of Acne. E. Simon.—p. 37.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

25:135-192 (Oct.) 1944

Investigation into Production of Bacteriostatic Substances by Fungi: Preliminary Examination of Fourth 100 Species, All Penicillia. W. H. Wilkins and G. C. M. Harris.—p. 135.
Mammary Tumor Inducing Factor and Genetic Constitution. L. Dmochowski.—p. 138.
Infection of Mice with Mycobacterium Tuberculosis (Bovis) by Respiratory Route. R. E. Glover.—p. 141.
Magnesium Potentiation of Adenosine Triphosphate Shock and Other Shock Inducing Measures. H. N. Green and H. B. Stoner.—p. 150.
Muscular Fatigue in Albino Rat, and Its Relationship to Thyroid. J. L. Malcolm and V. I. E. Whitehead.—p. 160.
Nucleic Acid and Nucleotide Content of Tumors. J. N. Davidson and C. Waymouth.—p. 164.
Sensitization to "Tetryl." P. G. H. Gell.—p. 174.

British Journal of Radiology, London

17:323-354 (Nov.) 1944

*Stress Fractures of First Rib. B. R. Alderson.—p. 323.
Dosage Rate in Radiotherapy. L. H. Gray, F. Ellis, G. C. Fairchild and Edith Paterson.—p. 327.
Observations on Opaque Myelography of Lumbar Disk Herniations. D. C. Eaglesham.—p. 343.
The Action of Neutrons on Bacteria. F. G. Spear.—p. 348.
Stellate Translucencies as a Sign of Gallstones. A. S. Johnstone.—p. 352.

Stress Fractures of the First Rib.—In 55,451 routine fluorographic examinations at a naval establishment, Alderson observed 35 men who had a condition in one or both of their first ribs which at first, for want of a better term, was described as "an anomaly of the first rib." The appearance of the lesion varied considerably in most respects except its situation, which was invariably just proximal to the scalene tubercle. Some of the cases showed an irregular transverse or oblique break in the continuity of the rib associated with a fusiform swelling around the lesion, showing the radiologic characteristics of callus in varying degrees of formation. Others appeared to be of much longer standing, and the surrounding swelling appeared to be fully formed bone. Each patient was interrogated as to history and symptomatology. The sixteenth patient first gave the elements of credence to the hypothesis that the condition might be related in its etiology to other types of stress fracture. Only 5 patients volunteered significant symptoms and history. Of these, 2 gave a history of "sudden pain in the shoulder" occurring shortly after strenuous physical training, 2 admitted direct trauma some years previously, and the fifth stated that prior to entry into the service he had carried 1 cwt. (51 Kg.) bags of coal on his shoulder and had complained of a sore shoulder for the first week or two. The evidence suggests that the abnormality is a stress fracture of the first rib.

Journal of Hygiene, London

43:363-434 (Sept.) 1944

Studies in Dynamics of Disinfection: II. Calculation of Concentration Exponent for Phenol at 35 C. with Bact. Coli, as Test Organism. R. C. Jordan and S. E. Jacobs.—p. 363.
Some Bacteriologic Aspects of Dehydrated Foods. R. B. Haines and E. M. L. Elliot.—p. 370.
Germicidal Mists and Vapors in Air Disinfection. A. H. Baker and C. C. Twort.—p. 382.
Factor Analysis as Aid to Nutritional Assessment. W. H. Hammond. —p. 395.
*Some Epithelial Changes in Fluorosis. L. Spira.—p. 400.
Incidence of Dystrophies Caused by Fluorine in Organs Regulated by Parathyroid Glands. L. Spira.—p. 402.
Application of Principle of Partial Pressure of Gases to Haldane's Method of Stage Decompression. G. W. M. Boycott.—p. 409.
Typing of Strains of Bact. Paratyphosum B by Biochemical Method of Kristensen and Bojlen. Jean MacNaughtan.—p. 411.
Cytologic Observations on Bact. Coli, Proteus Vulgaris and Various Aerobic Spore Forming Bacteria, with Special Reference to Nuclear Structures. C. F. Robinow.—p. 413.
Bacteriology of Activated Sludge. L. A. Allen.—p. 424.

Epithelial Changes in Fluorosis.—Spira says that the action of fluorine is known to consist in its ability to precipitate calcium salts stored in the body, material indispensable for sustaining the vitality of most of the organic functions. The protracted ingestion of toxic amounts of this halogen may bring about the reduction of calcium in both blood and tissues to a dangerous level. The lesions may be produced by fluorine attacking tissues directly, or fluorine may interfere with the normal function of the parathyroids. Spira asserts that fluorine is contained in aluminum cooking utensils and in drinking water. The action of fluorine consists in lowering the level of the calcium in the blood and tissues. The epithelium of the mouth and the salivary glands, of the nasopharynx, the conjunctivas and the lacrimal glands may be affected. Signs and symptoms are thus produced which are closely similar to those usually attributed primarily to infection. It is suggested that an infection accompanying chronic fluorine poisoning is of a secondary nature and that it is brought about by the loss of calcium in the body.

Journal of Laryngology and Otology, London

59:117-169 (April) 1944

Conservative Treatment of Chronic Suppurative Otitis Media in Adults. T. M. Banham.—p. 117.
Gastroenteritis and Mastoiditis in Infants. B. Cohen.—p. 136.
Meningitis Following Mastoid Infection by Bacillus Proteus. M. Sugar. —p. 146.

Medical Journal of Australia, Sydney

2:397-420 (Oct. 14) 1944

*Tropical Diseases in Returned Solders. H. H. Turnbull.—p. 397.
Experiences with Mobile Surgical Team on an Amphibious Operation in New Guinea.—p. 402.
Dagmar Berne: The First Woman Student in the Medical School of University of Sydney. R. S. Skirving.—p. 407.

2:421-444 (Oct. 21) 1944

Medicinal Induction of Labor and Induction in Postmaturity. W. I. Hayes.—p. 421.
Indications for Surgical Induction of Labor. W. D. Saltau.—p. 424.
Methods of Surgical Induction of Labor. A. M. Hill.—p. 425.
Comparison Between Surgical Induction of Labor by Means of Rectal Tube and Surgical Induction of Labor by Artificial Rupture of Membranes: Statistical Survey. Margaret A. Mackie.—p. 428.
Bacteriologic Diagnosis of Bacillary Dysentery by Means of Rectal Swabs. A. A. Ferris and C. Fortune.—p. 430.
Simple Method of Obtaining "One Way" Vision and Audition. F. V. Smith.—p. 433.

Tropical Diseases in Returned Soldiers.—Turnbull stresses that tropical diseases which Australians contracted in the war in New Guinea will force themselves on the attention of the practitioner at home. The present routine course of treatment followed by 0.1 Gm. of atabrine per day for six weeks will produce cure of malignant tertian malaria in almost 100 per cent of cases. This does not apply to benign tertian malaria; there is no drug that will cure this infection, although the routine treatment rarely fails to terminate an attack and the maintenance course of atabrine will stave off early relapse. Every soldier who lands in Australia from New Guinea or the islands is given a supply of atabrine sufficient to last for six weeks, with instructions to take one tablet every day. If he does this he will not die of malignant tertian malaria, and he almost certainly will not develop an attack of benign tertian malaria, though a relapse due to benign tertian is likely to develop about three weeks after he stops taking his drug. If, however, he is careless and fails to take his tablet each day, he is likely to have a malarial attack which may be a sudden and intense cerebral attack or some other form of malignant tertian infection producing a rapidly fatal result. This has happened in 4 or 5 cases, and other men have been admitted urgently to military hospitals and saved by prompt and vigorous treatment. It is therefore important that all medical practitioners should aid by stressing this danger to all whom they can influence, because many men are encouraged by their friends and relatives to give up taking their tablets under the plea that they are harmful or unnecessary. Two statements gave some trouble. These were that (1) atabrine will cause sterility in some men who take it and (2) atabrine damages the liver. There is no evidence in favor of either statement. If all doctors preach the great importance of continuing suppressive treatment with atabrine, tragedies and near tragedies from cerebral malaria will be reduced greatly. When a man is infected with malaria many things tend to cause an attack, such as chill, cold bathing, another illness, blood loss, anesthesia and operation, and such relapses are apt to occur for a period of three years or more after the patient leaves a malarious area.

Book Notices

Principles and Practices of Inhalational Therapy. By Alvan L. Barach, M.D., Associate Professor of Clinical Medicine, Columbia College of Physicians and Surgeons, New York. Fabrikoid. Price, $4. Pp. 315, with 59 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1944.

This is the first complete handbook on inhalational therapy written by a physician with wide experience in the application of physical principles to clinical medicine. The first chapter deals with the historical and physiologic background of the therapeutic use of oxygen, carbon dioxide, helium, positive pressure, lung immobilization and vaporized solutions of epinephrine and neosynephrine. In the next thirty chapters the author discusses the pathologic physiology and specific inhalational treatment of various diseases, including pneumonia, pulmonary edema, congestive heart failure and bronchial asthma. Methods of inhalational therapy and technics of gas analysis are described in the last seven chapters, with clear illustrations and practical guidance in the choice of apparatus. The book will be useful to physicians and technicians who are responsible for the therapeutic use of gases in clinical medicine and in many phases of war medicine as well.

Manual of Human Cross Section Anatomy. By Dudley J. Morton, M.D., Associate Professor of Anatomy, Department of Anatomy, College of Physicians and Surgeons, Columbia University, New York. Second edition. Cloth. Price, $6. Pp. 211, with illustrations. Baltimore: William Wood & Company, 1944.

The second edition of this popular manual of human cross section anatomy retains all of the material included in the first and contains several additions for the convenience of the student. A much smaller and more compact volume than the first edition, it nevertheless contains reproductions of ninety cross sections through the head and neck, thorax and abdomen, female abdomen and pelvis, upper extremity, thigh and leg, ankle and foot, sixteen key figures and forty-one pages for notes, including seven pages with outline drawings for recording sensory areas of the skin and arterial anastomoses about joints.

The manual is designed for flexibility of use either by the individual student or for a formal class, to provide a personal reference work book for the student and to stimulate the student to think in terms of three dimensional relationships with the minimum of time and effort.

If used under proper supervision in connection with adequate material and reference books, this manual may be of some value as one of many accessories in the teaching of cadaver anatomy. As a reference book the manual has certain defects: Sometimes successive cross sections are too far apart for completeness and to indicate continuity and relationships in the third dimension; the specimen used for the female pelvis is abnormal or atypical. As a work book the manual is in the nature of a picture puzzle book, requiring little thought or effort on the part of the student.

The aim of anatomy is the knowledge and understanding of the structural relationships of the living human body. Only the dead body can be completely dissected, and the cadaver relationships must be interpolated into the living condition. Modern roentgenologic methods have made this possible, whereas cross sections serve to emphasize the cadaver relationships and so have receding value in the modern teaching of anatomy. Consequently such a manual of cross section anatomy, though it makes the interpretations of cross sections easy and interesting, will be of minor value except where a lack of material, modern equipment or time for the thorough study of anatomy exists.

Proteins and Amino Acids: Physiology, Pathology, Therapeutics. Cloth. Gratis to Medical Profession. Pp. 189. Yonkers, New York: Arlington Chemical Company, 1944.

This little book has been prepared to present a comprehensive digest of the known facts concerning the participation of protein in body processes. The important contributions on protein found in the literature up to June 1944 are effectively organized under subject headings and the essential facts from the original works accurately reported. The first sections deal with the physiology of protein and establish a basis of understanding for the cause-relationship and therapeutic usage of protein in disease conditions which is discussed later. Editorial discussion and opinion based on information gained in reading the extensive bibliography and from conferences with the leaders in the various fields convey the information to the reader in a simple, easily read manner. The main objective of the monograph is to bring together the impressive amount of data on the importance of adequate protein supplies in the treatment of numerous disease conditions. This purpose is well served. The factual information, briefly and concisely presented, as well as the extensive references found in this book should make it attractive to the physician and nutritionist.

The Measurement of Adult Intelligence. By David Wechsler, Chief Psychologist, Bellevue Psychiatric Hospital, New York. Third edition. Cloth. Price, $3.50. Pp. 258, with 12 illustrations. Baltimore: Williams & Wilkins Company, 1944.

One of the most serious criticisms of earlier editions of this well known and accepted battery of intelligence tests devised for adults rather than for children was that the tests given were not standardized on a sufficient number of persons. This situation has now been corrected to some extent, but the type of cases used leads to statistical misinterpretations. In addition there are some defects in the author's concepts of test formation, particularly the idea that there is such a thing as mental alertness that can be measured. Wechsler argues that his test is a good measure of intelligence because experience has shown it to be so, and the experience of the reviewer is that this is not an acceptable statement. In many instances the test results are too high when weighed against the psychiatric evaluation. The fact that the test is weighted for adults causes the author to make certain concessions which are not acceptable: the slightly deteriorated or elderly adult reacts higher than his actual mental function. Mental defectives are also rated higher than they would be on other tests, and most clinical psychiatric evaluations indicate that the Wechsler examination rates defective persons too high. The test procedure and the criteria for evaluating the answers are included in the book. For the skilled examiner who can select tests effectively to suit various problem individuals, the Wechsler test is a very satisfactory one. For general use the psychiatrist might well be cautious in accepting results obtained by any but the most highly trained clinical psychologist.

Diagnóstico topográfico de los procesos pleuropulmonares: Estudio anatómico, clínico y radiológico. Por el Dr. Juan Soto Blanco, profesor agregado de cirugía, cirujano del Instituto. Facultad de medicina de Montevideo, Instituto de tisiología "Prof. Dr. J. B. Morelli." Colección de monografías. Monografía N° 1. Paper. Pp. 106, with illustrations. Montevideo, 1944.

This is one of a collection of monographs published under the auspices of the Dr. J. B. Morelli Institute of Tuberculosis of the Faculty of Medicine of Montevideo. Much valuable radiologic research has been done in the University of Montevideo. The findings in the present research do not suggest any need of change in our conceptions of the anatomic divisions of the lung and their landmarks as seen on the roentgenograms. The numerous interesting cases reported and illustrated by anatomic and radiographic demonstrations emphasize the fact that the postoperative result of pleuropulmonary surgical operations is in great part dependent on correct topographic and etiologic diagnosis. An understanding of the bronchial system is of the greatest importance. For this the author uses bronchography, with screen and film studies in multiple positions.

Family Health Service in Tuberculosis: A Supplement to Guide No. 3 on Tuberculosis. Family Health Series Guide for Public Health Nurses No. 3A. Paper. Pp. 47, with illustrations. New York: Community Service Society, Department of Educational Nursing, 1944.

This is a pictorial representation in posed photographs of the work of the public health nurse in the handling of a case of open tuberculosis in which a delay is encountered in finding sanatorium accommodations. Home technics for the avoidance of infection are demonstrated. The role of the nurse in arranging sanatorium care and the necessary social services is explained. It is a good job of clear exposition. The photography is good and the brief accompanying captions are clear and concise. The pamphlet should be of use to public health agencies dealing with tuberculosis and to physicians in the same field.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

HAZARDS OF TONSILLECTOMY AND ADENOIDECTOMY

To the Editor:—**Can you give me any data on the number of deaths per year in the United States caused by tonsillectomy? In my opinion there are too many tonsillectomies and adenoidectomies being performed, and too many doctors consider this operation without danger and tell the parents so.** Lee K. Emenhiser, Lieutenant Colonel, M. C., A. U. S.

ANSWER.—The figures requested are not readily available. Life insurance company statistics are not very informative, and the Bureau of the Census states that exact figures on the number of deaths caused by tonsillectomies each year cannot be supplied, partly because no distinction is made in the classification of cause of death between tonsillitis and postoperative complications of tonsillectomy. Failure to separate deaths among children from those among adults and failure to separate those due to local anesthetics as distinguished from those due to general anesthetics makes reporting difficult. However, Fowler states that in a group of approximately 250,000 tonsil and adenoid operations performed in all parts of the United States between the years 1915 and 1925 there were thirty-three deaths which occurred within twenty-four hours after operation. Four of these deaths were due to injection of cocaine and four were due to injection of some other local anesthetic. Three deaths followed general anesthesia (type of anesthetic used not stated). The chief cause of death was hemorrhage, of which there were fourteen instances; other causes were the cutting of the internal carotid artery and the cutting of anomalous blood vessels; embolism and epilepsy accounted for six deaths.

If one assumes that the inquiry relates chiefly to children and deducts those deaths due to the use of local anesthetics, there is a still smaller number, assumed to be children, who die within the first twenty-four hours after operation; roughly, less than 1 in 10,000. There are of course later deaths from pneumonia, lung abscess and other causes, but there is no way of getting accurate figures in these cases.

Tonsillectomy and adenoidectomy are the most commonly performed surgical procedures in the United States. It is perhaps true that they are frequently recommended when proper indications do not obtain, and it is also true that these operations are not lacking in danger. Even if death is not common following the operation there are complications which are not pleasant, chief among which is hemorrhage, which may reduce the patient's vigor and health for weeks afterward.

Hence tonsillectomy and adenoidectomy is not different from any other surgical intervention and should not be undertaken without adequate reason.

Reference:

Fowler, Robert H.: Tonsil Surgery, Philadelphia, F. A. Davis Company, 1930.

HEMOCHROMATOSIS

To the Editor:—**I have a patient whose condition has been diagnosed as hemochromatosis (bronze diabetes). Kindly supply information on latest treatment.** Andres Vegalio Guzman, M.D., Cartago, Costa Rica.

ANSWER.—Treatment aims to control symptoms resulting from destruction of the islands of Langerhans in consequence of hemochromatosis. In some cases the extent of the destruction of the islands is minimal, in others extreme, so that the dosage of insulin is most variable, 20 to 1,680 units being the range in the series of 19 cases reported by the Joslin group. The same holds true for the diet, but in general one endeavors, as in all cases of disease of the liver, to store glycogen in that organ and therefore, compared with the fat, the carbohydrate and indeed the protein in the diet are high and the fat is low. In cases of severe anemia liver extract may be helpful, and if hydrochloric acid is deficient in the gastric secretion it should be administered. In some patients because of the associated testicular atrophy testosterone has been tried. Vitamins A and B as recommended by Wilder may be useful as will other vitamins, but other than what is mentioned one must depend on symptomatic treatment. One should not be too pessimistic about the outcome. A patient with hemochromatosis may live for years.

EPIDEMIC DIARRHEA AND VOMITING

To the Editor:—**I have read with interest an article in the Jan. 6, 1945 issue of The Journal regarding epidemic diarrhea, nausea and vomiting of unknown cause in Philadelphia. Recent observations during an epidemic of infectious mononucleosis prompt me to write to present the question of the possibility of infectious mononucleosis being present in the epidemics described. Can this be ruled out? The heterophile antibody test used as a criterion in this disease was recorded as being done in only 6 cases and was reported simply as "negative." The differential white cell counts are not reported. The symptoms as described fit loosely into a large group of known and unknown conditions, among which would appear to be included a certain number of cases of infectious mononucleosis with predominantly gastrointestinal manifestations.** Stanton S. Eddy Jr., M.D., Middlebury, Vt.

ANSWER.—It is true that "the symptoms as described fit loosely into a large group of known and unknown conditions." Nausea, vomiting and diarrhea are, of course, among the most common symptoms of many infectious diseases including infectious mononucleosis, but when they occur as the predominant symptoms in almost all patients with an epidemic disease it is reasonable to regard that disease as an entity or at least a syndrome. It is by such reasoning that progress in nosology is made, often long before the specific cause is discovered. The situation was quite the same when the viral pneumonias were separated from the large indeterminate group of infections of the respiratory tract in 1938.

It is unlikely that the authors of the paper referred to and all the authors of the reports referred to in the paper, and the discussers, were mistaken in their diagnoses. In none of the patients studied were changes in the blood characteristic of infectious mononucleosis encountered; in none were the lymph nodes or spleen swollen; in none were severe sore throat, pain in the neck or joints, eruptions of the skin, jaundice, conjunctivitis or illness of two to three weeks ever noted. How else can infectious mononucleosis "be ruled out" without knowing the exact cause or other specific tests in either disease?

CATHARTICS AND POLIOMYELITIS

To the Editor:—**We are undergoing our second epidemic of poliomyelitis within the past few years here in Laurel, Md. I have seen 5 cases this year, all verified by spinal tap and hospitalized. The first child was already showing signs of foot drop and was hospitalized immediately. The next 3 cases were seen at the onset and were treated at first on the basis of their symptoms of enterocolitis with a dose of calomel and phenolphthalein followed by a saline laxative. Their symptoms were greatly relieved, and though their fever persisted for a while they did not develop any weakness. The fifth case was seen on the second day, and a tentative diagnosis of poliomyelitis was made. Since the child, a girl of 12 years, had had saline purges on the two previous days, I waited another day before giving calomel. Her temperature had continued at 101 F. in spite of acetylsalicylic acid, and her headache and leg pain were not relieved until after 1 grain (0.065 Gm.) each of calomel and phenolphthalein had been given followed by magnesia magma the next morning. This was the fourth day of her illness. There was the same definite improvement of temperature, pain, muscular spasm and anxiety that was noted in the other cases. Her condition remained good, but she was later hospitalized for isolation and residual muscle spasm, as were the others. There was a slight foot drop of one foot in this case, which later improved. This may have been due to the fact that calomel was not administered until the third day after the onset of the illness. Has this therapy been used before? Does not the emptying of the entire gastrointestinal tract with calomel and phenolphthalein seem to be rational early treatment in view of the consistent finding of the virus in the excreta of the victims in epidemic areas by research groups such as Trask and Paul (*Am. J. Pub. Health* 31: 239 [March] 1941)?** John M. Warren, M.D., Laurel, Md.

ANSWER.—The number of cases treated by calomel and phenolphthalein is too few from which to draw any definite scientific conclusions. After clinical manifestations have presented themselves, poliomyelitis is much like the other virus diseases, such as measles, chickenpox, mumps and smallpox. None of these diseases can be altered in any way by drug, chemical or serum, and the possible removal of virus from the alimentary canal cannot affect virus already in the central nervous system. There is no evidence that a purge completely cleans the alimentary canal of virus. The 5 consecutive cases of poliomyelitis referred to might easily all be nonparalytic regardless of any treatment, while the next 5 might all be serious and perhaps even fatal. Many authorities who specialize in the treatment of poliomyelitis patients believe that the giving of drastic purges to such patients is not without danger. Cathartics, in cases in which an inability to empty the bladder and bowel has developed, many times cause increased peristalsis and abdominal cramps, often harming the patient's ability to empty the bowel.